List of Boundary-value Problem (P3C) s for 3D Cartesian Domains, for which the Green's Functions for Poisson's Equation have been derived

Green's functions to these Problems can be found in the book:
Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

(P3C) 1. Space $(-\infty \le x_1, x_2, x_3 \le \infty)$

This Section formulates a boundary-value Problem (P3C) on constructing Green's function, G' of Poisson equation for the space, final Answer to it provided.

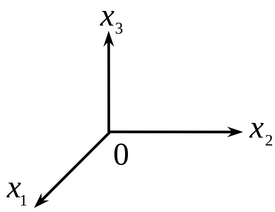

Figure 13: Space in Cartesian co-ordinates.

(P3C) 1.1. Boundary-value Problem (P3C)

Let us consider the following boundary value Problem (P3C) s which consist from the Poisson equation

$$\nabla^2 G(x_1, \xi_1; x_2, \xi_2) = -\delta(x - \xi);$$
$$\nabla^2 U(x_1, x_2) = -f(x_1, x_2).$$

in the inner points of the space. At infinity the functions G and U must vanish.

Problem (P3C).1 To construct the Green's function $G(x, \xi)$ for Poisson's equation $\nabla^2 G(x, \xi) = -\delta(x - \xi)$ for the space $(-\infty \le x_1, x_2, x_3 \le \infty)$.

The Answer to Problem (P3C).1 **for space** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

(P3C)*2. Half-space* $(0 \le x_1 \le \infty, -\infty \le x_2, x_3 \le \infty)$

This section formulates two boundary-value Problem (P3C) s on constructing Green's functions, $G^{(j)}, (j = 1-2)$, of Poisson's equation for the half-space

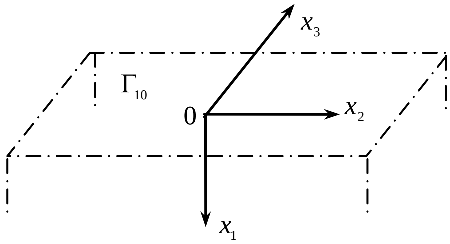

Figure 2: Half-space with boundary plane Γ_{10} .

(P3C) 2.1. Boundary-value Problems

Let us consider the following boundary value Problem (P3C) s which consist from the Poisson equation

$$\nabla^2 U(x_1, x_2) = -f(x_1, x_2)$$

in the inner points of the half-space. At infinity the functions U must vanish.
On the boundaries, one of the following two functions are given:

$$\partial U(0, y_2, y_3)/\partial n_1 = g_1(0, y_2, y_3) \; or \; U(0, y_2, y_3) = s_1(0, y_2, y_3)$$

$$\nabla^2 G(x_1, \xi_1; x_2, \xi_2) = -\delta(x - \xi)$$

and the boundary conditions defined below for each Problem (P3C) .

Problems (P3C) 2.1- (P3C)2.2

To construct the Green's functions for Poisson's equation $\nabla^2 G(x, \xi) = -\delta(x-\xi)$ for the half-space $(0 \le x_1 \le \infty, -\infty \le x_3, x_3 \le \infty)$ under the following boundary conditions:
The solutions of the 16 Problem (P3C) s and their related Green's functions $G^{(j)}$, $(j = 1-16)$ for Poisson's equation $\nabla^2 G(x, \xi) = -\delta(x-\xi)$ for the rectangular $(0 \le x_1 \le a_1, 0 \le x_2 \le a_2)$ are given below for the suitable boundary conditions defined in the boxes:

Problem (P3C) 2.1 $\boxed{G^{(1)} = 0; \quad x_1 = 0, \; -\infty \le x_2, x_3 \le \infty; \quad U(0, y_2, y_3) = S(0, y_2, y_3)}$

The Answer toProblem (P3C) 2.1 **for half-space** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 2.2 $\boxed{\partial G^{(2)}/\partial x_1 = 0; \quad x_1 = 0, \; -\infty \le x_2, x_3 \le \infty. \, \partial U/\partial n_1 = g(0, y_2, y_3)}$

Problem (P3C) 2.2 **for half-space** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

(P3C)*3. Quarter-space* $(0 \le x_1, x_2 \le \infty, -\infty \le x_3 \le \infty)$

This Section formulates four boundary-value Problem (P3C) s on constructing Green's functions, $G^{(j)}, (j = 1-4)$, of Poisson's equation for the quarter-space

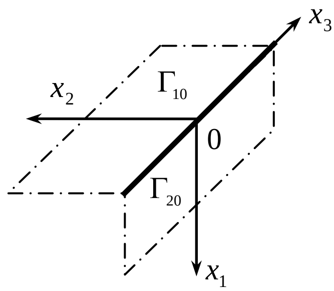

Figure 3: Quarter-space with boundary half-planes Γ_{10} and Γ_{20} .

Let us consider the following boundary value Problem (P3C) s which consist from the Poisson equation

$$\nabla^2 G(x_1, \xi_1; x_2, \xi_2) = -\delta(x - \xi);$$
$$\nabla^2 U(x_1, x_2) = -f(x_1, x_2).$$

in the inner points of the half-space. At infinity the functions G and U must vanish.

To construct the Green's functions $G^{(j)}, (j = 1-4)$ for Poisson's equation $\nabla^2 G(x, \xi) = -\delta(x - \xi)$ for the quarter-space $(0 \le x_1, x_2 \le \infty, -\infty \le x_3 \le \infty)$ under the following homogeneous boundary conditions:

Problem (P3C) 3.1

$$G^{(1)} = 0;\ x_1 = 0, 0 \le x_2 \le \infty, -\infty \le x_3 \le \infty; \quad U(0, y_2, y_3) = s_1(0, y_2, y_3);$$
$$G^{(1)} = 0;\ x_2 = 0, 0 \le x_1 \le \infty, -\infty \le x_3 \le \infty; \quad U(y_1, 0, y_3) = s_2(y_1, 0, y_3).$$

The Answer to Problem (P3C) 3.1 **for quarter-space** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 3.2

$$\partial G^{(2)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le \infty, -\infty \le x_3 \le \infty;\ \partial U(0, y_2, y_3)/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(2)}/\partial x_2 = 0;\ x_2 = 0, 0 \le x_1 \le \infty, -\infty \le x_3 \le \infty;\quad \partial U(y_1, 0, y_3)/\partial n_2 = g_2(y_1, 0, y_3)$$

The Answer to Problem (P3C) 3.2 **for quarter-space** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 3.3

$$\partial G^{(3)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le \infty, -\infty \le x_3 \le \infty;\ \partial U(0, y_2, y_3)/\partial n_1 = g_1(0, y_2, y_3)$$
$$G^{(3)} = 0;\ x_2 = 0, 0 \le x_1 \le \infty, -\infty \le x_3 \le \infty;\quad U(y_1, 0, y_3) = s_2(y_1, 0, y_3).$$

The Answer to Problem (P3C) 3.3 **for quarter-space** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 3.4

$$G^{(4)} = 0;\ x_1 = 0, 0 \le x_2 \le \infty, -\infty \le x_3 \le \infty;\quad U(0, y_2, y_3) = s_1(0, y_2, y_3);$$
$$\partial G^{(4)}/\partial x_2 = 0;\ x_2 = 0, 0 \le x_1 \le \infty, -\infty \le x_3 \le \infty;\quad \partial U(y_1, 0, y_3)/\partial n_2 = g_2(y_1, 0, y_3).$$

The Answer to Problem (P3C) 3.4 **for quarter-space** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

(P3C)*4. Octant* $(0 \le x_1, x_2, x_3 \le \infty)$

This Section formulates eight boundary-value Problem (P3C) s on constructing Green's functions, $G^{(j)},\ j = 1-8,$ of Poisson's equation for the octant

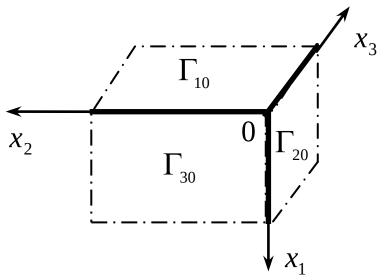

Figure 4: Octant with boundary quadrants Γ_{10} , Γ_{20} and Γ_{30} .

Problems (P3C) 4.1–(P3C)4.8

Let us consider the following boundary value Problem (P3C) s which consist from the Poisson equation

$$\nabla^2 G(x_1, \xi_1; x_2, \xi_2) = -\delta(x - \xi);$$
$$\nabla^2 U(x_1, x_2) = -f(x_1, x_2).$$

in the inner points of the octant. At infinity the functions G and U must vanish.

To construct the Green's functions $G^{(j)}$, $j = 1 - 8$, for Poisson's equation $\nabla^2 G(x, \xi) = -\delta(x - \xi)$ for the octant $(0 \le x_1, x_2, x_3 \le \infty)$ under the following homogeneous boundary conditions:

Problem (P3C) 4.1

$$G^{(1)} = 0; x_1 = 0,\ 0 \le x_2 \le \infty,\ 0 \le x_1 \le \infty; \quad U(0, y_2, y_3) = s_1(0, y_2, y_3);$$
$$G^{(1)} = 0; x_2 = 0,\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le \infty; \quad U(y_1, 0, y_3) = s_2(y_1, 0, y_3);$$
$$G^{(1)} = 0; x_3 = 0,\ 0 \le x_1 \le \infty,\ 0 \le x_2 \le \infty; \quad U(y_1, y_2 y_3) = s_3(y_1, y_2, y_3).$$

The Answer to Problem (P3C) 4.1 **for octant** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 4.2

$$\partial G^{(2)} / \partial x_1 = 0;\ x_1 = 0,\ 0 \le x_2 \le \infty; 0 \le x_3 \le \infty; \quad \partial U(0, y_2, y_3)/\partial n_1 = s_1(0, y_2, y_3);$$
$$\partial G^{(2)} / \partial x_2 = 0;\ x_2 = 0,\ 0 \le x_1 \le \infty; 0 \le x_3 \le \infty;; \quad \partial U(y_1, 0, y_3)/\partial n_2 = s_2(y_1, 0, y_3);$$
$$\partial G^{(2)} / \partial x_3 = 0;\ x_3 = 0, 0 \le x_2 \le \infty, 0 \le x_1 \le \infty. \quad \partial U(y_1, y_2, 0)/\partial n_3 = s_3(y_1, y_2, 0).$$

The Answer to Problem (P3C) 4.2 **for octant** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 4.3

$$G^{(3)} = 0;\ x_1 = 0,\ 0 \le x_2 \le \infty, 0 \le x_3 \le \infty;\ U(0, y_2, y_3) = s_1(0, y_2, y_3);$$
$$G^{(3)} = 0;\ x_2 = 0,\ 0 \le x_1 \le \infty, 0 \le x_3 \le \infty;\quad U(y_1, 0, y_3) = s_2(y_1, 0, y_3)$$
$$\partial G^{(3)}/\partial x_3 = 0;\ x_3 = 0, 0 \le x_2 \le \infty,\ 0 \le x_1 \le \infty;\ \partial U(y_1, y_2, 0)/\partial n_3 = s_3(y_1, y_2, 0).$$

The Answer to Problem (P3C) 4.3 **for octant** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 4.4

$$G^{(4)} = 0;\ x_1 = 0,\ 0 \le x_2 \le \infty, 0 \le x_3 \le \infty;\quad U(0, y_2, y_3) = s_1(0, y_2, y_3);$$
$$\partial G^{(4)}/\partial x_2 = 0;\ x_2 = 0,\ 0 \le x_1 \le \infty, 0 \le x_3 \le \infty;\ \partial U(y_1, 0, y_3)/\partial n_2 = s_2(y_1, 0, y_3);$$
$$\partial G^{(4)}/\partial x_3 = 0;\ x_3 = 0, 0 \le x_2 \le \infty,\ 0 \le x_1 \le \infty;\quad \partial U(y_1, y_2, 0)/\partial n_3 = s_3(y_1, y_2, 0).$$

The Answer to Problem (P3C) 4.4 **for octant** (Green's function for Poisson's equation in Cartesian coordinates)

Problem (P3C) 4.5

$$\partial G^{(5)}/\partial x_1 = 0;\ x_1 = 0,\ 0 \le x_2 \le \infty, 0 \le x_3 \le \infty;\quad \partial U(0, y_2, y_3)/\partial n_1 = s_1(0, y_2, y_3);$$
$$G^{(5)} = 0, x_2 = 0,\ 0 \le x_1 \le \infty, 0 \le x_3 \le \infty;\quad U(y_1, 0, y_3) = s_2(y_1, 0, y_3);$$
$$G^{(5)} = 0; x_3 = 0, 0 \le x_2 \le \infty,\ 0 \le x_1 \le \infty;\quad U(y_1, y_2 y_3) = s_3(y_1, y_2, y_3).$$

The Answer to Problem (P3C) 4.5 **for octant** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 4.6

$$\partial G^{(6)}/\partial x_1 = 0 = 0;\ x_1 = 0,\ 0 \le x_2 \le \infty, 0 \le x_3 \le \infty; \partial U(0, y_2, y_3)/\partial n_1 = s_1(0, y_2, y_3);$$
$$\partial G^{(6)}/\partial x_2 = 0, x_2 = 0,\ 0 \le x_1 \le \infty, 0 \le x_3 \le \infty; \partial U(y_1, 0, y_3)/\partial n_2 = s_2(y_1, 0, y_3);$$
$$G^{(6)} = 0; x_3 = 0, 0 \le x_2 \le \infty, 0 \le x_1 \le \infty.\quad U(y_1, y_2 y_3) = s_3(y_1, y_2, y_3).$$

The Answer to Problem (P3C) 4.6 **for octant** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 4.7

$$\partial G^{(7)}/\partial x_1 = 0;\ x_1 = 0,\ 0 \le x_2 \le \infty, 0 \le x_3 \le \infty;\ \partial U(0, y_2, y_3)/\partial n_1 = s_1(0, y_2, y_3);$$
$$G^{(7)} = 0, x_2 = 0,\ 0 \le x_1 \le \infty, 0 \le x_3 \le \infty;\ U(y_1, 0, y_3) = s_2(y_1, 0, y_3);$$
$$\partial G^{(7)}/\partial x_3 = 0;\ x_3 = 0,\ 0 \le x_2 \le \infty,\ 0 \le x_1 \le \infty.;\ \partial U(y_1, y_2, 0)/\partial n_3 = s_3(y_1, y_2, 0).$$

The Answer to Problem (P3C) 4.7 **for octant** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 4.8

$$G^{(8)} = 0;\ x_1 = 0,\ 0 \le x_2 \le \infty, 0 \le x_3 \le \infty;\ U(0, y_2, y_3) = s_1(0, y_2, y_3);$$
$$\partial G^{(8)}/\partial x_2 = 0;\ x_2 = 0,\ 0 \le x_1 \le \infty, 0 \le x_3 \le \infty;\ \partial U(y_1, 0, y_3)/\partial n_2 = s_2(y_1, 0, y_3);$$
$$G^{(8)} = 0;\ x_3 = 0,\ 0 \le x_2 \le \infty, 0 \le x_1 \le \infty;\ U(y_1, y_2, 0) = s_3(y_1, y_2, 0).$$

The Answer to Problem (P3C) 4.8 **for octant** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

(P3C)*5. Layer* $(-\infty \le x_1, x_2 \le \infty, 0 \le x_3 \le a_3)$

This section formulates four boundary-value Problem (P3C) s on constructing Green's functions, $G^{(j)}, (j = 1-4)$, of Poisson's equation for the layer

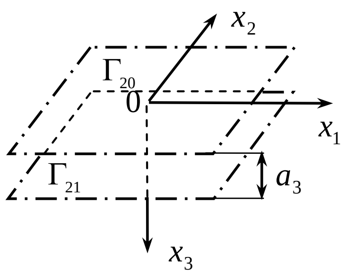

Figure 5: Layer with boundary planes Γ_{20} and Γ_{21}.

Problems (P3C) 5.1– (P3C) 5.4

Let us consider the following boundary value Problem (P3C) s which consist from the Poisson equation

$$\nabla^2 G(x_1, \xi_1; x_2, \xi_2) = -\delta(x - \xi);$$
$$\nabla^2 U(x_1, x_2) = -f(x_1, x_2).$$

in the inner points of the octant. At infinity the functions G and U must vanish.

To construct the Green's functions $G^{(j)}(x,\xi),(j=1-4)$ for Poisson's equation $\nabla^2 G^{(j)}(x,\xi) = -\delta(x-\xi)$ for the layer $(-\infty \le x_1, x_2 \le \infty, 0 \le x_3 \le a_3)$ under the following homogeneous boundary conditions:

Problem (P3C) 5.1

$$G^{(1)} = 0;\ x_3 = 0, -\infty \le x_1, x_2 \le \infty; \quad U(y_1, y_2, 0) = s_3(y_1, y_2, 0);$$
$$G^{(1)} = 0;\ x_3 = a_3, -\infty \le x_1, x_2 \le \infty; \quad .U(y_1, y_2, a_3) = s_3^{/}(y_1, y_2, a_3);$$

The Answer to Problem (P3C) 5.1 **for layer** (Green's function for Poisson's equation in Cartesian coordinates)
can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 5.2

$$\partial G^{(2)} / \partial x_3 = 0;\ x_3 = 0, -\infty \le x_1, x_2 \le \infty; \quad \partial U(y_1, y_2, 0) / \partial n_3 = g_3(y_1, y_2, 0);$$
$$\partial G^{(2)} / \partial x_3 = 0;\ x_3 = a_3, -\infty \le x_1, x_2 \le \infty; \quad \partial U(y_1, y_2, 0) / \partial n_3 = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 5.2 **for layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 5.3

$$G^{(3)} = 0,\ x_3 = 0, -\infty \le x_3 \le \infty; \quad U(y_1, y_2, 0) = s_3(y_1, y_2, 0);$$
$$\partial G^{(3)} / \partial x_3 = 0,\ x_3 = a_3, -\infty \le x_3 \le \infty; \quad \partial U(y_1, y_2, 0) / \partial n_3 = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 5.3 **for layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 5.4

$$\partial G^{(4)} / \partial x_3 = 0;\ x_3 = 0, -\infty \le x_1, x_2 \le \infty; \quad \partial U(y_1, y_2, 0) / \partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(4)} = 0;\ x_3 = a_3, -\infty \le x_1, x_2 \le \infty; \quad .U(y_1, y_2, a_3) = s_3^{/}(y_1, y_2, a_3)$$

The Answer to Problem (P3C) 5.4 **for layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

(P3C)*6. Half-layer* $(0 \le x_1 \le \infty, -\infty \le x_2 \le \infty, 0 \le x_3 \le a_3)$

This section formulates eight boundary-value Problem (P3C) s on constructing Green's functions, $G^{(j)}, (j=1-8)$, of Poisson's equation for the half-layer

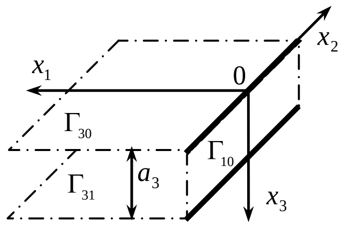

Figure 6: Half-layer with boundary half- planes Γ_{30}, Γ_{31} and boundary strip Γ_{10} .

Problems (P3C) 6.1– (P3C) 6.8

Let us consider the following boundary value Problem (P3C) s which consist from the Poisson equation

$$\nabla^2 G(x_1,\xi_1;x_2,\xi_2) = -\delta(x-\xi);$$
$$\nabla^2 U(x_1,x_2) = -f(x_1,x_2).$$

in the inner points of the half-layer. At infinity the functions G and U must vanish.

To construct the Green's functions $G^{(j)}(x,\xi), (j=1-8)$ for Poisson's equation $\nabla^2 G^{(j)}(x,\xi) = -\delta(x-\xi)$ for the half-layer $(0 \le x_1 \le \infty, -\infty \le x_2 \le \infty, 0 \le x_3 \le a_3)$ under the following homogeneous boundary conditions:

Problem (P3C) 6.1

$$G^{(1)} = 0; \begin{cases} x_1 = 0; \quad -\infty \le x_2 \le \infty, \ 0 \le x_3 \le a_3; \quad U = s_1(0, y_2, y_3); \\ x_3 = 0,; \ 0 \le x_1 \le \infty, \ -\infty \le x_2 \le \infty; \quad U = s_3(y_1, y_2, 0); \\ x_3 = a_3; \ 0 \le x_1 \le \infty, \ -\infty \le x_2 \le \infty; \quad U = s_3^{/}(y_1, y_2, a_3); \end{cases}$$

The Answer to Problem (P3C) 6.1 **for half-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 6.2

$$\begin{array}{l} \partial G^{(2)}/\partial x_1 = 0; x_1 = 0, -\infty \le x_2 \le \infty, 0 \le x_3 \le a_3; \quad \partial U/\partial y_1 = g_1(0, y_2, y_3); \\ \partial G^{(2)}/\partial x_3 = 0; \ x_3 = 0; 0 \le x_1 \le \infty, -\infty \le x_2 \le \infty; \quad \partial U/\partial y_3 = g_3(y_1, y_2, 0); \\ \partial G^{(2)}/\partial x_3 = 0; \ x_3 = a_3; 0 \le x_1 \le \infty, -\infty \le x_2 \le \infty; \quad \partial U/\partial y_3 = g_3^{/}(y_1, y_2, a_3). \end{array}$$

The Answer to Problem (P3C) 6.2 **for half-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 6.3

$$G^{(3)}=0;\ x_1=0,\ -\infty\le x_2\le\infty,\ 0\le x_3\le a_3;\quad U=s_1(0,y_2,y_3)$$
$$\partial G^{(3)}/\partial x_3=0;\ x_3=0;\ 0\le x_1\le\infty,\ -\infty\le x_2\le\infty;\quad \partial U/\partial y_3=g_3(y_1,y_2,0);$$
$$\partial G^{(3)}/\partial x_3=0;\ x_3=a_3;\ 0\le x_1\le\infty,\ -\infty\le x_2\le\infty;\quad \partial U/\partial y_3=g_3^{/}(y_1,y_2,a_3)$$

The Answer to Problem (P3C) 6.3 **for half-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 6.4

$$G^{(4)}=0;\begin{cases}x_1=0,\ -\infty\le x_2\le\infty,\ 0\le x_3\le a_3; & U=s_1(0,y_2,y_3);\\ x_3=0,\ 0\le x_1\le\infty,\ -\infty\le x_2\le\infty; & U=s_3(y_1,y_2,0);\end{cases}$$
$$\partial G^{(4)}/\partial x_3=0;\ x_3=a_3;\ 0\le x_1\le\infty,\ -\infty\le x_2\le\infty;\quad \partial U/\partial y_3=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 6.4 **for half-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 6.5

$$G^{(5)}=0;\begin{cases}x_1=0,\ -\infty\le x_2\le\infty,\ 0\le x_3\le a_3; & U=s_1(0,y_2,y_3);\\ x_3=a_3,\ 0\le x_1\le\infty,\ -\infty\le x_2\le\infty; & U=s_3^{/}(y_1,y_2,a_3);\end{cases}$$
$$\partial G^{(5)}/\partial x_3=0;\ x_3=0;\ 0\le x_1\le\infty,\ -\infty\le x_2\le\infty;\ \partial U/\partial y_3=g_3^{/}(y_1,y_2,0).$$

The Answer to Problem (P3C) 6.5 **for half-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 6.6

$$\partial G^{(6)}/\partial x_1=0;\ x_1=0,\ -\infty\le x_2\le\infty,\ 0\le x_3\le a_3;\ \partial U/\partial y_1=g_1(0,y_2,y_3);$$
$$G^{(6)}=0;\ x_3=0;\ 0\le x_1\le\infty,\ -\infty\le x_2\le\infty;\quad U=s_3(y_1,y_2,0);$$
$$G^{(6)}=0;\ x_3=a_3;\ 0\le x_1\le\infty,\ -\infty\le x_2\le\infty;\ U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 6.6 **for half-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 6.7

$$\left.\begin{array}{l}\partial G^{(7)}/\partial x_1 = 0;\ x_1 = 0,\ -\infty \le x_2 \le \infty,\ 0 \le x_3 \le a_3;\ \partial U/\partial y_1 = g_1(0, y_2, y_3);\\ \left.\begin{array}{l} G^{(7)} = 0;\ x_3 = 0,\\ \partial G^{(7)}/\partial x_3 = 0;\ x_3 = a_3\end{array}\right\},\ 0 \le x_1 \le \infty,\ -\infty \le x_2 \le \infty.\left\{\begin{array}{l}U = s_3(y_1, y_2, 0);\\ \partial U/\partial y_3 = g_3^{/}(y_1, y_2, a_3).\end{array}\right.\end{array}\right.$$

The Answer to Problem (P3C) 6.7 **for half-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 6.8

$$\begin{array}{l}\partial G^{(8)}/\partial x_1 = 0;\ x_1 = 0,\ -\infty \le x_2 \le \infty,\ 0 \le x_3 \le a_3;\ \partial U/\partial y_1 = g_1(0, y_2, y_3);\\ \left.\begin{array}{l}\partial G^{(8)}/\partial x_3 = 0;\ x_3 = 0,\\ G^{(8)} = 0;\ x_3 = a_3\end{array}\right\},\ 0 \le x_1 \le \infty,\ -\infty \le x_2 \le \infty;\ \left\{\begin{array}{l}\partial U/\partial y_3 = g_3(y_1, y_2, 0);\\ U = s_3^{/}(y_1, y_2, a_3).\end{array}\right.\end{array}$$

The Answer to Problem (P3C) 6.8 **for half-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

(P3C)*7. Quarter-layer* $(0 \le x_1, x_2 \le \infty,\ 0 \le x_3 \le a_3)$

This Section formulates 16 boundary-value Problem (P3C) s on constructing Green's functions, $G^{(j)}, (j = 1-16)$, of Poisson's equation for the quarter-layer

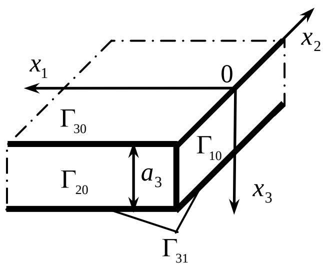

Figure 7: Quarter-layer with boundary quadrants Γ_{30}, Γ_{31} and boundary half-strips Γ_{10}, Γ_{20} .

Problems (P3C)7.1– (P3C) 7.16

To construct the Green's functions $G^{(j)}(x, \xi), (j = 1-16)$ for Poisson's equation $\nabla^2 G^{(j)}(x, \xi) = -\delta(x - \xi)$ for the quarter-layer $(0 \le x_1, x_2 \le \infty,\ 0 \le x_3 \le a_3)$ under the following homogeneous boundary conditions:

Problem (P3C) 7.1

$$G^{(1)}=0;\ x_1=0;\quad 0\le x_2\le\infty,\ 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$G^{(1)}=0;\ x_2=0;\quad 0\le x_1\le\infty,\ 0\le x_3\le a_3; U=s_2(y_1,0,y_3);$$
$$G^{(1)}=0;\ x_3=0;\ 0\le x_1\le\infty,\ 0\le x_2\le\infty; U=s_3(y_1,y_2,0);$$
$$G^{(1)}=0;\ x_3=a_3;\ 0\le x_1\le\infty,\ 0\le x_2\le\infty; U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 7.1 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 7.2

$$\partial G^{(2)}/\partial x_1=0;\ x_1=0,\ 0\le x_2\le\infty,\ 0\le x_3\le a_3; \partial U/\partial y_1=g_1(0,y_2,y_3);$$
$$\partial G^{(2)}/\partial x_2=0;\ x_2=0,\ 0\le x_1\le\infty,\ 0\le x_3\le a_3; \partial U/\partial y_2=g_2(y_1,0,y_3);$$
$$\partial G^{(2)}/\partial x_3=0;\ x_3=0;\ 0\le x_1\le\infty,\ 0\le x_2\le\infty; \partial U/\partial y_3=g_3(y_1,y_2,0);$$
$$\partial G^{(2)}/\partial x_3=0;\ x_3=a_3;\ 0\le x_1\le\infty,\ 0\le x_2\le\infty; \partial U/\partial y_3=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 7.2 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 7.3

$$G^{(3)}=0;\ x_1=0,\ 0\le x_2\le\infty,\ 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$G^{(3)}=0;\ x_2=0,\ 0\le x_1\le\infty,\ 0\le x_3\le a_3; U=s_2(y_1,0,y_3);$$
$$\partial G^{(3)}/\partial x_3=0;\ x_3=0;\ 0\le x_1\le\infty,\ 0\le x_2\le\infty; \partial U/\partial y_3=g_3(y_1,y_2,0);$$
$$\partial G^{(3)}/\partial x_3=0;\ x_3=a_3;\ 0\le x_1\le\infty,\ 0\le x_2\le\infty; \partial U/\partial y_3=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 7.3 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 7.4

$$G^{(4)}=0;\ x_1=0,\ 0\le x_2\le\infty,\ 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$G^{(4)}=0;\ x_2=0,\ 0\le x_1\le\infty,\ 0\le x_3\le a_3; U=s_2(y_1,0,y_3);$$
$$G^{(4)}=0;\ x_3=0,\ 0\le x_1\le\infty,\ 0\le x_3\le a_3;\ U=s_3(y_1,y_2,0);$$
$$\partial G^{(4)}/\partial x_3=0;\ x_3=a_3,\ 0\le x_1\le\infty,\ 0\le x_2\le\infty; \partial U/\partial y_3=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 7.4 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 7.5

$$G^{(5)}=0;\ x_1=0,\ 0\le x_2\le\infty,\ 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$G^{(5)}=0;\ x_2=0,\ 0\le x_1\le\infty,\ 0\le x_3\le a_3; U=s_2(y_1,0,y_3);$$
$$\partial G^{(5)}/\partial x_3=0;\ x_3=0,\ 0\le x_1\le\infty,\ 0\le x_2\le\infty; \partial U/\partial y_3=g_3(y_1,y_2,0);$$
$$G^{(5)}=0;\ x_3=a_3,\ 0\le x_1\le\infty,\ 0\le x_2\le\infty; U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 7.5 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 7.6

$$G^{(6)}=0;\ x_1=0,\ 0\le x_2\le\infty,\ 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$\partial G^{(6)}/\partial x_2=0;\ x_2=0,\ 0\le x_1\le\infty,\ 0\le x_3\le a_3; \partial U/\partial y_2=g_2(y_1,0,y_3);$$
$$\partial G^{(6)}/\partial x_3=0;\ x_3=0;\ 0\le x_1\le\infty,\ 0\le x_2\le\infty; \partial U/\partial y_3=g_3(y_1,y_2,0);$$
$$\partial G^{(6)}/\partial x_3=0;\ x_3=a_3;\ 0\le x_1\le\infty,\ 0\le x_2\le\infty; \partial U/\partial y_3=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 7.6 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 7.7

$$G^{(7)}=0;\ x_1=0,\ 0\le x_2\le\infty,\ 0\le x_3\le a_3; s_1(0,y_2,y_3);$$
$$\partial G^{(7)}/\partial x_2=0;\ x_2=0,\ 0\le x_1\le\infty,\ 0\le x_3\le a_3; \partial U/\partial y_2=g_2(y_1,0,y_3);$$
$$G^{(7)}=0;\ x_3=0;\ 0\le x_1\le\infty,\ 0\le x_2\le\infty; U=s_3(y_1,y_2,0);$$
$$G^{(7)}=0;\ x_3=a_3;\ 0\le x_1\le\infty,\ 0\le x_2\le\infty; U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 7.7 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 7.8

$$G^{(8)}=0;\ x_1=0,\ 0\le x_2\le\infty,\ 0\le x_3\le a_3; s_1(0,y_2,y_3);$$
$$\partial G^{(8)}/\partial x_2=0;\ x_2=0,\ 0\le x_1\le\infty,\ 0\le x_3\le a_3; \partial U/\partial y_2=g_2(y_1,0,y_3);$$
$$G^{(8)}=0;\ x_3=0,\ 0\le x_1\le\infty,\ 0\le x_3\le\infty; U=s_3(y_1,y_2,0);$$
$$\partial G^{(8)}/\partial x_3=0;\ x_3=a_3,\ 0\le x_1\le\infty,\ 0\le x_2\le\infty; \partial U/\partial y_3=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 7.8 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 7.9

$$\begin{array}{|l|}\hline G^{(9)}=0;\ \ x_1=0,\ 0\le x_2\le\infty,\ \ 0\le x_3\le a_3; U=s_1(0,y_2,y_3);\\ \partial G^{(9)}/\partial x_2=0;\ x_2=0,\ 0\le x_1\le\infty,\ 0\le x_3\le a_3;\ \partial U/\partial y_2=g_2(y_1,0,y_3);\\ \partial G^{(9)}/\partial x_3=0;\ \ x_3=0,\ 0\le x_1\le\infty,\ \ 0\le x_3\le a_3;\ \partial U/\partial y_3=g_3(y_1,y_2,0);\\ G^{(9)}=0;\ x_3=a_3,\ \ 0\le x_1\le\infty,\ 0\le x_2\le\infty; U=s_3^{/}(y_1,y_2,a_3).\\ \hline\end{array}$$

The Answer to Problem (P3C) 7.9 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 7.10

$$\begin{array}{|l|}\hline \partial G^{(10)}/\partial x_1=0;\ \ x_1=0,\ 0\le x_2\le\infty,\ \ 0\le x_3\le a_3;\partial U/\partial y_1=g_1(0,y_2,y_3);\\ \partial G^{(10)}/\partial x_2=0;\ x_2=0,\ 0\le x_1\le\infty,\ 0\le x_3\le a_3;\ \partial U/\partial y_2=g_2(y_1,0,y_3);\\ G^{(10)}=0;\ x_3=0;\ 0\le x_1\le\infty,\ 0\le x_2\le\infty;\ \ U=s_3(y_1,y_2,0);\\ G^{(10)}=0;\ x_3=a_3;\ 0\le x_1\le\infty,\ 0\le x_2\le\infty; U=s_3^{/}(y_1,y_2,a_3).\\ \hline\end{array}$$

The Answer to Problem (P3C) 7.10 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 7.11

$$\begin{array}{|l|}\hline \partial G^{(11)}/\partial x_1=0;\ \ x_1=0,\ 0\le x_2\le\infty,\ \ 0\le x_3\le a_3;\ \partial U/\partial y_1=g_1(0,y_2,y_3);\\ \partial G^{(11)}/\partial x_2=0;\ x_2=0,\ 0\le x_1\le\infty,\ 0\le x_3\le a_3;\ \partial U/\partial y_2=g_2(y_1,0,y_3);\\ G^{(11)}=0;\ \ x_3=0,\ 0\le x_1\le\infty,\ \ 0\le x_3\le a_3; U=s_3(y_1,y_2,0);\\ \partial G^{(111)}/\partial x_3=0;\ x_3=a_3,\ \ 0\le x_1\le\infty,\ 0\le x_2\le\infty;\ \partial U/\partial y_3=g_3^{/}(y_1,y_2,a_3).\\ \hline\end{array}$$

The Answer to Problem (P3C) 7.11 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 7.12

$$\begin{array}{|l|}\hline \partial G^{(12)}/\partial x_1=0;\ \ x_1=0,\ 0\le x_2\le\infty,\ \ 0\le x_3\le a_3;\partial U/\partial y_1=g_1(0,y_2,y_3);\\ \partial G^{(12)}/\partial x_2=0;\ x_2=0,\ 0\le x_1\le\infty,\ 0\le x_3\le a_3;\ \partial U/\partial y_2=g_2(y_1,0,y_3);\\ \partial G^{(12)}/\partial x_3=0;\ \ x_3=0,\ 0\le x_1\le\infty,\ \ 0\le x_3\le a_3;\ \partial U/\partial y_3=g_3(y_1,y_2,0);\\ G^{(12)}=0;\ x_3=a_3,\ \ 0\le x_1\le\infty,\ 0\le x_2\le\infty;\ \ U=s_3^{/}(y_1,y_2,a_3).\\ \hline\end{array}$$

The Answer to Problem (P3C) 7.12 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 7.13

$$\partial G^{(13)}/\partial x_1 = 0;\ \ x_1 = 0,\ 0 \le x_2 \le \infty,\ \ 0 \le x_3 \le a_3; \partial U/\partial y_1 = g_1(0, y_2, y_3);$$
$$G^{(13)} = 0;\ x_2 = 0,\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$G^{(13)} = 0;\ \ x_3 = 0,\ 0 \le x_1 \le \infty,\ \ 0 \le x_2 \le \infty; U = s_3(y_1, y_2, 0);$$
$$G^{(13)} = 0;\ x_3 = a_3,\ \ 0 \le x_1 \le \infty,\ 0 \le x_2 \le \infty; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 7.13 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 7.14

$$\partial G^{(14)}/\partial x_1 = 0;\ \ x_1 = 0,\ 0 \le x_2 \le \infty,\ \ 0 \le x_3 \le a_3; \partial U/\partial y_1 = g_1(0, y_2, y_3);$$
$$G^{(14)} = 0;\ x_2 = 0,\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(14)}/\partial x_3 = 0;\ x_3 = 0;\ 0 \le x_1 \le \infty,\ 0 \le x_2 \le \infty;\ \partial U/\partial y_3 = g_3(y_1, y_2, 0);$$
$$\partial G^{(14)}/\partial x_3 = 0;\ x_3 = a_3;\ 0 \le x_1 \le \infty,\ 0 \le x_2 \le \infty;\ \partial U/\partial y_3 = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 7.14 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 7.15

$$\partial G^{(15)}/\partial x_1 = 0;\ \ x_1 = 0,\ 0 \le x_2 \le \infty,\ \ 0 \le x_3 \le a_3; \partial U/\partial y_1 = g_1(0, y_2, y_3);$$
$$G^{(15)} = 0;\ x_2 = 0,\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$G^{(15)} = 0;\ \ x_3 = 0,\ 0 \le x_1 \le \infty,\ \ 0 \le x_2 \le \infty; U = s_3(y_1, y_2, 0);$$
$$\partial G^{(15)}/\partial x_3 = 0;\ x_3 = a_3,\ \ 0 \le x_1 \le \infty,\ 0 \le x_2 \le \infty;\ \partial U/\partial y_3 = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 7.15 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 7.16

$$\partial G^{(16)}/\partial x_1 = 0;\ \ x_1 = 0,\ 0 \le x_2 \le \infty,\ \ 0 \le x_3 \le a_3;\ \partial U/\partial y_1 = g_1(0, y_2, y_3);$$
$$G^{(16)} = 0;\ x_2 = 0,\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3;\quad U = s_2(y_1, 0, y_3);$$
$$\partial G^{(16)}/\partial x_3 = 0;\ \ x_3 = 0,\ 0 \le x_1 \le \infty,\ \ 0 \le x_2 \le \infty;\ \partial U/\partial y_3 = g_3(y_1, y_2, 0);$$
$$G^{(16)} = 0;\ x_3 = a_3,\ \ 0 \le x_1 \le \infty,\ 0 \le x_2 \le \infty; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 7.16 **for quarter-layer** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

(P3C)*8. Unbounded Parallelepiped* $(-\infty \le x_1 \le \infty; 0 \le x_2 \le a_2; 0 \le x_3 \le a_3)$

In this section formulates 16 boundary-value Problem (P3C) s on constructing Green's functions, $G^{(j)}, (j = 1-16)$, of Poisson's equation for the unbounded parallelepiped

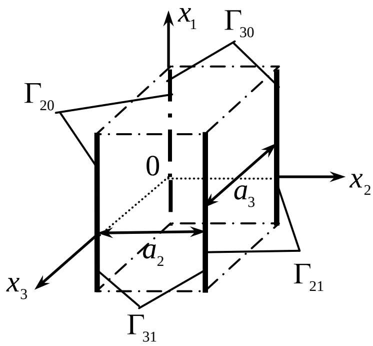

Figure 8: Unbounded parallelepiped with boundary strips Γ_{20}, Γ_{21} and Γ_{30}, Γ_{31}.

Problems (P3C) 8.1– (P3C) 8.16

To construct the Green's functions $G^{(j)}, (j = 1-16)$ of Poisson's equation $\nabla^2 G^{(j)}(x, \xi) = -\delta(x - \xi)$ for the unbounded parallelepiped $(-\infty \le x_1 \le \infty; 0 \le x_2 \le a_2; 0 \le x_3 \le a_3)$ under the following homogeneous boundary conditions:

Problem (P3C) 8.1

$$G^{(1)} = 0;\ x_2 = 0; -\infty \le x_1 \le \infty,\ 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(1)} = 0;\ x_2 = a_2; -\infty \le x_1 \le \infty,\ 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$G^{(1)} = 0;\ x_3 = 0;\ -\infty \le x_1 \le \infty,\ 0 \le x_2 \le a_2 U = s_3(y_1, y_2, 0);$$
$$G^{(1)} = 0;\ x_3 = a_3;\ -\infty \le x_1 \le \infty,\ 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 8.1 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 8.2

$$\partial G^{(2)}/\partial x_2 = 0; x_2 = 0; -\infty \le x_1 \le \infty, 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$\partial G^{(2)}/\partial x_2 = 0; x_2 = a_2; -\infty \le x_1 \le \infty, 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1, 0, y_3);$$
$$\partial G^{(2)}/\partial x_3 = 0; x_3 = 0; -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$\partial G^{(2)}/\partial x_3 = 0; x_3 = a_3; -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3^{/} = g_3^{/}(y_1, y_2, 0).$$

The Answer to Problem (P3C) 8.2 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 8.3

$$G^{(3)}=0;x_2=0;-\infty\le x_1\le\infty,0\le x_3\le a_3;\quad U=s_2(y_1,0,y_3);$$
$$G^{(3)}=0;x_2=a_2;-\infty\le x_1\le\infty,0\le x_3\le a_3;\quad U=s_2^{/}(y_1,a_2,y_3);$$
$$\partial G^{(3)}/\partial x_3=0;x_3=0;-\infty\le x_1\le\infty,0\le x_2\le a_2;\partial U/\partial n_3=g_3(y_1,y_2,0);$$
$$\partial G^{(3)}/\partial x_3=0;x_3=a_3;-\infty\le x_1\le\infty,0\le x_2\le a_2;\partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,0).$$

The Answer to Problem (P3C) 8.3 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 8.4

$$\partial G^{(4)}/\partial x_2=0;x_2=0;-\infty\le x_1\le\infty,0\le x_3\le a_3;\quad \partial U/\partial n_2=g_2(y_1,0,y_3);$$
$$\partial G^{(4)}/\partial x_2=0;x_2=a_2;-\infty\le x_1\le\infty,0\le x_3\le a_3;\partial U/\partial n_2^{/}=g_2^{/}(y_1,0,y_3);$$
$$G^{(4)}=0;x_3=0;-\infty\le x_1\le\infty,0\le x_2\le a_2;\quad U=s_3(y_1,y_2,0);$$
$$G^{(4)}=0;x_3=a_3;-\infty\le x_1\le\infty,0\le x_2\le a_2;\quad U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 8.4 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 8.5

$$G^{(5)}=0;\ x_2=0,\quad -\infty\le x_1\le\infty,\quad 0\le x_3\le a_3\ U=s_2(y_1,0,y_3);$$
$$\partial G^{(5)}/\partial x_2=0;x_2=a_2,-\infty\le x_1\le\infty,0\le x_3\le a_3;\partial U/\partial n_2^{/}=g_2^{/}(y_1,0,y_3);$$
$$G^{(5)}=0;x_3=0,a_3;-\infty\le x_1\le\infty,0\le x_2\le a_2;U=s_3(y_1,y_2,0);$$
$$G^{(5)}=0;x_3=0,a_3;-\infty\le x_1\le\infty,0\le x_2\le a_2;U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 8.5 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 8.6

$$\partial G^{(6)}/\partial x_2=0;\ x_2=0,-\infty\le x_1\le\infty,\quad 0\le x_3\le a_3;\partial U/\partial n_2=g_2(y_1,0,y_3);$$
$$G^{(6)}=0;x_2=a_2,-\infty\le x_1\le\infty,0\le x_3\le a_3;\quad U=s_2^{/}(y_1,a_2,y_3);$$
$$\partial G^{(6)}/\partial x_3=0;x_3=0,a_3;-\infty\le x_1\le\infty,0\le x_2\le a_2;\partial U/\partial n_3=g_3(y_1,y_2,0);$$
$$\partial G^{(6)}/\partial x_3=0;x_3=0,a_3;-\infty\le x_1\le\infty,0\le x_2\le a_2;\partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,0).$$

The Answer to Problem (P3C) 8.6 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 8.7

$$G^{(7)} = 0;\ x_2 = 0,\quad -\infty \le x_1 \le \infty,\quad 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(7)}/\partial x_2 = 0; x_2 = a_2, -\infty \le x_1 \le \infty, 0 \le x_3 \le a_3; \frac{\partial U}{\partial n_2^{/}} = g_2^{/}(y_1, 0, y_3);$$
$$\partial G^{(7)}/\partial x_3 = 0; x_3 = 0, a_3; -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$\partial G^{(7)}/\partial x_3 = 0; x_3 = 0, a_3; -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3^{/} = g_3^{/}(y_1, y_2, 0).$$

The Answer to Problem (P3C) 8.7 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 8.8

$$\partial G^{(78)}/\partial x_2 = 0;\ x_2 = 0,\quad -\infty \le x_1 \le \infty,\quad 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(8)} = 0; x_2 = a_2, -\infty \le x_1 \le \infty, 0 \le x_3 \le a_3;\quad U = s_2^{/}(y_1, a_2, y_3);$$
$$G^{(8)} = 0; x_3 = 0, a_3; -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$G^{(8)} = 0; x_3 = 0, a_3; -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 8.8 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 8.9

$$G^{(9)} = 0;\ x_2 = 0, a_2, -\infty \le x_1 \le \infty,\quad 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(9)} = 0;\ x_2 = 0, a_2, -\infty \le x_1 \le \infty,\quad 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(9)}/\partial x_3 = 0; x_3 = 0, -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2;\ \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(9)} = 0, x_3 = a_3, -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 8.9 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 8.10

$$G^{(10)} = 0;\ x_2 = 0, a_2, -\infty \le x_1 \le \infty,\quad 0 \le x_3 \le a_3;\quad U = s_2(y_1, 0, y_3);$$
$$G^{(10)} = 0;\ x_2 = 0, a_2, -\infty \le x_1 \le \infty,\quad 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$G^{(10)} = 0;\ x_3 = 0, -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$\partial G^{(10)}/\partial x_3 = 0, x_3 = a_3, -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3^{/} = g_3^{/}(y_1, y_2, 0).$$

The Answer to Problem (P3C) 8.10 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 8.11

$$\partial G^{(11)}/\partial x_2 = 0;\; x_2 = 0; -\infty \le x_1 \le \infty,\quad 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1,0,y_3);$$
$$\partial G^{(11)}/\partial x_2 = 0;\; x_2 = a_2; -\infty \le x_1 \le \infty,\quad 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1,0,y_3);$$
$$G^{(11)} = 0;\; x_3 = 0, -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2; U = s_3(y_1,y_2,0);$$
$$\partial G^{(11)}/\partial x_3 = 0, x_3 = a_3, -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3^{/} = g_3^{/}(y_1,y_2,0).$$

The Answer to Problem (P3C) 8.11 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 8.12

$$G^{(12)} = 0; x_2 = 0, -\infty \le x_1 \le \infty, 0 \le x_3 \le a_3; U = s_2(y_1,0,y_3);$$
$$\partial G^{(11)}/\partial x_2 = 0; x_2 = a_2, -\infty \le x_1 \le \infty, 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1,0,y_3);$$
$$G^{(12)} = 0;\; x_3 = 0, -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2; U = s_3(y_1,y_2,0);$$
$$\partial G^{(11)}/\partial x_3 = 0, x_3 = a_3, -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3^{/} = g_3^{/}(y_1,y_2,0).$$

The Answer to Problem (P3C) 8.12 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates)
can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 8.13

$$\partial G^{(13)}/\partial x_3 = 0; x_2 = 0, -\infty \le x_1 \le \infty, 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1,0,y_3);$$
$$G^{(13)} = 0; x_2 = a_2, -\infty \le x_1 \le \infty, 0 \le x_3 \le a_3; U = s_2^{/}(y_1,a_2,y_3);$$
$$G^{(13)} = 0;\; x_3 = 0, -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2;\; U = s_3(y_1,y_2,0);$$
$$\partial G^{(13)}/\partial x_3 = 0, x_3 = a_3, -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3^{/} = g_3^{/}(y_1,y_2,0).$$

The Answer to Problem (P3C) 8.13 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 8.14

$$\partial G^{(14)}/\partial x_2 = 0; x_2 = 0, a_2, -\infty \le x_1 \le \infty, 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1,0,y_3);$$
$$\partial G^{(14)}/\partial x_2 = 0; x_2 = 0, a_2, -\infty \le x_1 \le \infty, 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1,0,y_3);$$
$$\partial G^{(14)}/\partial x_3 = 0; x_3 = 0, -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1,y_2,0);$$
$$G^{(14)} = 0,\quad x_3 = a_3,\quad -\infty \le x_1 \le \infty,\quad 0 \le x_2 \le a_2; U = s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 8.14 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 8.15

$$G^{(15)} = 0;\ x_2 = 0, -\infty \le x_1 \le \infty, 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$\partial G^{(15)}/\partial x_2 = 0;\ x_2 = a_2, -\infty \le x_1 \le \infty, 0 \le x_3 \le a_3;\ \partial U/\partial n_2^{/} = g_2^{/}(y_1, 0, y_3);$$
$$\partial G^{(15)}/\partial x_3 = 0; x_3 = 0, -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2;\ \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(15)} = 0,\ x_3 = a_3, -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2;\ U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 8.15 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 8.16

$$\partial G^{(16)}/\partial x_2 = 0;\ x_2 = 0, -\infty \le x_1 \le \infty, 0 \le x_3 \le a_3;\ \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(16)} = 0;\ x_2 = a_2, -\infty \le x_1 \le \infty, 0 \le x_3 \le a_3;\ U = s_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(16)}/\partial x_3 = 0;\ \ x_3 = 0, -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2;\ \partial U/\partial n_2 = g_3(y_1, y_2, 0);$$
$$G^{(16)} = 0,\ x_3 = a_3, -\infty \le x_1 \le \infty, 0 \le x_2 \le a_2;\ U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 8.16 **for unbounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

(P3C)*9. Semi-bounded Parallelepiped* $(0 \le x_1 \le \infty; 0 \le x_2 \le a_2; 0 \le x_3 \le a_3)$

This section formulates thirty two boundary-value Problem (P3C) s on constructing Green's functions, $G^{(j)}, (j = 1-32)$, of Poisson's equation for the semi-bounded parallelepiped

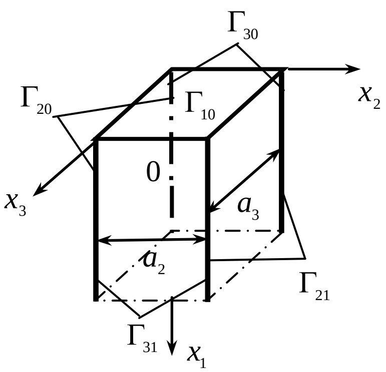

Figure 9: Semi-bounded parallelepiped with boundary half-strips $\Gamma_{20}, \Gamma_{21}, \Gamma_{30}, \Gamma_{31}$ and boundary rectangular Γ_{10}.

Problems (P3C) 9.1–(P3C)9.32

To construct the Green's functions $G^{(j)}(x,\xi),(j=1-32)$ of Poisson's equation $\nabla^2 G^{(j)}(x,\xi)=-\delta(x-\xi)$ for the semi-bounded parallelepiped $(0\le x_1\le\infty;0\le x_2\le a_2;0\le x_3\le a_3)$ under the following homogeneous boundary conditions:

Problem (P3C) 9.1

$$\begin{array}{c}
G^{(1)}=0;\,x_1=0,\,0\le x_2\le a_2,0\le x_3\le a_3;U=s_1(0,y_2,y_3);\\
G^{(1)}=0;\,x_2=0;\;\;0\le x_1\le\infty,\;0\le x_3\le a_3;U=s_2(y_1,0,y_3);\\
G^{(1)}=0;\,x_2=a_2;\;\;0\le x_1\le\infty,\;0\le x_3\le a_3;U=s_2^{/}(y_1,a_2,y_3);\\
G^{(1)}=0;\,x_3=0;\;\;0\le x_1\le\infty,\;0\le x_2\le a_2;U=s_3(y_1,y_2,0);\\
G^{(1)}=0;\,x_3=a_3;\;\;0\le x_1\le\infty,\;0\le x_2\le a_2;U=s_3^{/}(y_1,y_2,a_3).
\end{array}$$

The Answer to Problem (P3C) 9.1 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.2

$$\begin{array}{c}
\partial G^{(2)}/\partial x_1=0;\;x_1=0,0\le x_2\le a_2,0\le x_3\le a_3;\partial U/\partial n_1=g_1(0,y_2,y_3);\\
\partial G^{(2)}/\partial x_2=0;\;x_2=0;\,0\le x_1\le\infty,0\le x_3\le a_3;\partial U/\partial n_2=g_2(y_1,0,y_3);\\
\partial G^{(2)}/\partial x_2=0;\;x_2=a_2;\,0\le x_1\le\infty,0\le x_3\le a_3;\partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);\\
\partial G^{(2)}/\partial x_3=0;\;x_3=0;\,0\le x_1\le\infty,\,0\le x_2\le a_2;\partial U/\partial n_3=g_3(y_1,y_3,0);\\
\partial G^{(2)}/\partial x_3=0;\;x_3=a_3;\,0\le x_1\le\infty,\,0\le x_2\le a_2;\partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).
\end{array}$$

The Answer to Problem (P3C) 9.2 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.3

$$\begin{array}{c}
G^{(3)}=0;\,x_1=0,0\le x_2\le a_2,0\le x_3\le a_3;\;U=s_1(0,y_2,y_3);\\
G^{(3)}=0;\,x_2=0;\,0\le x_1\le\infty,\,0\le x_3\le a_3;U=s_2(y_1,0,y_3);\\
G^{(3)}=0;\,x_2=a_2;\,0\le x_1\le\infty,\,0\le x_3\le a_3;U=s_2^{/}(y_1,a_2,y_3);\\
\partial G^{(3)}/\partial x_3=0;\;x_3=0;\,0\le x_1\le\infty,\,0\le x_2\le a_2;\partial U/\partial n_3=g_3(y_1,y_2,0);\\
\partial G^{(3)}/\partial x_3=0;\;x_3=a_3;\,0\le x_1\le\infty,\,0\le x_2\le a_2;\partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).
\end{array}$$

The Answer to Problem (P3C) 9.3 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.4

$$\partial G^{(4)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(4)} = 0;\ x_2 = 0;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(4)} = 0;\ x_2 = a_2;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(4)}/\partial x_3 = 0;\ x_3 = 0;\ 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$\partial G^{(4)}/\partial x_3 = 0;\ x_3 = a_3;\ 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.4 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.5

$$G^{(5)} = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_1(0, y_2, y_3);$$
$$\partial G^{(5)}/\partial x_2 = 0;\ x_2 = 0;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$\partial G^{(5)}/\partial x_2 = 0;\ x_2 = a_2;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$G^{(5)} = 0;\ x_3 = 0;\ 0 \le x_1 \le \infty,\ 0 \le x_2 \le a_2;\ U = s_3(y_1, y_2, 0);$$
$$G^{(5)} = 0;\ x_3 = a_3;\ 0 \le x_1 \le \infty,\ 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.5 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.6

$$\partial G^{(6)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(6)}/\partial x_2 = 0;\ x_2 = 0;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3;\ \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$\partial G^{(6)}/\partial x_2 = 0;\ x_2 = a_2; 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$G^{(6)} = 0;\ x_3 = 0;\ 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$G^{(6)} = 0;\ x_3 = a_3;\ 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.6 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.7

$$G^{(7)} = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3;\ U = s_1(0, y_2, y_3);$$
$$G^{(7)} = 0;\ x_2 = 0, 0 \le x_1 \le \infty, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(7)}/\partial x_2 = 0;\ x_2 = a_2; 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$G^{(7)} = 0;\ x_3 = 0;\ 0 \le x_1 \le \infty,\ 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$G^{(7)} = 0;\ x_3 = a_3;\ 0 \le x_1 \le \infty,\ 0 \le x_2 \le a_2;\ U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.7 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.8

$$\partial G^{(8)}/\partial x_1 = 0;\ x_1 = 0,\ 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(8)} = 0;\ x_2 = 0;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(8)}/\partial x_2 = 0; x_2 = a_2,\ 0 \le x_1 \le \infty,\ 0 \le x_2 \le a_2; \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$G^{(8)} = 0;\ x_3 = 0;\ 0 \le x_1 \le \infty,\ 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$G^{(8)} = 0;\ x_3 = a_3;\ 0 \le x_1 \le \infty,\ 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.8 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.9

$$G^{(9)} = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_1(0, y_2, y_3);$$
$$\partial G^{(9)}/\partial x_2 = 0;\ x_2 = 0; 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(9)} = 0;\ x_2 = a_2;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_2; U = s_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(9)}/\partial x_3 = 0;\ x_3 = 0; 0 \le x_1 \le \infty,\ 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$\partial G^{(9)}/\partial x_3 = 0;\ x_3 = a_3; 0 \le x_1 \le \infty,\ 0 \le x_2 \le a_2; \partial U/\partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.9 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.10

$$\partial G^{(10)}/\partial x_1 = 0;\ x_1 = 0; 0 \le x_2 \le a_2,\ 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(10)}/\partial x_2 = 0;\ x_2 = 0; 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(10)} = 0;\ x_2 = a_2; 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(10)}/\partial x_3 = 0;\ x_3 = 0;\ 0 \le x_1 \le \infty,\ 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$\partial G^{(10)}/\partial x_3 = 0;\ x_3 = a_3;\ 0 \le x_1 \le \infty,\ 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.10 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.11

$$G^{(11)}=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3;\ U=s_1(0,y_2,y_3);$$
$$G^{(11)}=0;\ x_2=0; 0\le x_1\le\infty,\ 0\le x_3\le a_3; U=s_2(y_1,0,y_3);$$
$$\partial G^{(11)}/\partial x_2=0;\ x_2=a_2; 0\le x_1\le\infty,\ 0\le x_3\le a_3;\ \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$\partial G^{(11)}/\partial x_3=0;\ x_3=0; 0\le x_1\le\infty, 0\le x_2\le a_2; \partial U/\partial n_3=g_3(y_1,y_2,0);$$
$$\partial G^{(11)}/\partial x_3=0;\ x_3=a_3; 0\le x_1\le\infty, 0\le x_2\le a_2; \partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 9.11 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.12

$$\partial G^{(12)}/\partial x_1=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1=g_1(0,y_2,y_3);$$
$$G^{(12)}=0;\ x_2=0; 0\le x_1\le\infty,\ 0\le x_3\le a_3; U=s_2(y_1,0,y_3);$$
$$\partial G^{(12)}/\partial x_2=0;\ x_2=a_2; 0\le x_1\le\infty,\ 0\le x_3\le a_3; \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$\partial G^{(12)}/\partial x_3=0;\ x_3=0;\ 0\le x_1\le\infty,\ 0\le x_2\le a_2; \partial U/\partial n_3=g_3(y_1,y_2,0);$$
$$\partial G^{(12)}/\partial x_3=0;\ x_3=a_3;\ 0\le x_1\le\infty,\ 0\le x_2\le a_2; \partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 9.12 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.13

$$G^{(13)}=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$\partial G^{(13)}/\partial x_2=0;\ x_2=0\ \ 0\le x_1\le\infty,\ 0\le x_3\le a_3; \partial U/\partial n_2=g_2(y_1,0,y_3);$$
$$G^{(13)}=0;\ x_2=a_2;\ 0\le x_1\le\infty,\ 0\le x_3\le a_3; U=s_2^{/}(y_1,a_2,y_3);$$
$$G^{(13)}=0;\ x_3=0;\ 0\le x_1\le\infty,\ 0\le x_2\le a_2; U=s_3(y_1,y_2,0);$$
$$G^{(13)}=0;\ x_3=a_3;\ 0\le x_1\le\infty,\ 0\le x_2\le a_2; U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 9.13 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.14

$$\partial G^{(14)}/\partial x_1=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1=g_1(0,y_2,y_3);$$
$$\partial G^{(14)}/\partial x_2=0;\ x_2=0;\ 0\le x_1\le\infty,\ 0\le x_3\le a_3; \partial U/\partial n_2=g_2(y_1,0,y_3)$$
$$G^{(14)}=0;\ x_2=a_2; 0\le x_1\le\infty,\ 0\le x_3\le a_3;\ U=s_2^{/}(y_1,a_2,y_3);$$
$$G^{(14)}=0;\ x_3=0;\ 0\le x_1\le\infty,\ 0\le x_2\le a_2; U=s_3(y_1,y_2,0);$$
$$G^{(14)}=0;\ x_3=a_3;\ 0\le x_1\le\infty,\ 0\le x_2\le a_2; U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 9.14 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.15

$$G^{(15)}=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$G^{(15)}=0;\ x_2=0;\ 0\le x_1\le a_1,\ 0\le x_3\le a_3;\ U=s_2(y_1,0,y_3);$$
$$G^{(15)}=0;\ x_2=a_2;\ 0\le x_1\le a_1,\ 0\le x_3\le a_3; U=s_2^{/}(y_1,a_2,y_3);$$
$$\partial G^{(15)}/\partial x_3=0;\ x_3=0;\ 0\le x_1\le\infty,\ 0\le x_2\le a_2; \partial U/\partial n_3^{/}=g_3(y_1,y_2,0);$$
$$G^{(15)}=0; x_3=a_3;\ 0\le x_1\le\infty,\ 0\le x_2\le a_2; U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 9.15 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.16

$$\partial G^{(16)}/\partial x_1=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1=g_1(0,y_2,y_3);$$
$$G^{(16)}=0;\ x_2=0;\ 0\le x_1\le\infty,\ 0\le x_3\le a_3; U=s_2(y_1,0,y_3);$$
$$G^{(16)}=0;\ x_2=a_2;\ 0\le x_1\le\infty,\ 0\le x_3\le a_3; U=s_2^{/}(y_1,a_2,y_3);$$
$$\partial G^{(16)}/\partial x_3=0;\ x_3=0;\ 0\le x_1\le\infty,\ 0\le x_2\le a_2; \partial U/\partial n_3=g_3(y_1,a_2,y_3);$$
$$G^{(16)}=0; x_3=a_3;\ 0\le x_1\le\infty, 0\le x_2\le a_2; U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 9.16 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.17

$$G^{(17)}=0; x_1=0, 0\le x_2\le a_2,\ 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$G^{(17)}=0; x_2=0;\ 0\le x_1\le\infty,\ 0\le x_3\le a_3; U=s_2(y_1,0,y_3);$$
$$G^{(17)}=0; x_2=a_2;\ 0\le x_1\le\infty,\ 0\le x_3\le a_3; U=s_2^{/}(y_1,a_2,y_3);$$
$$G^{(17)}=0; x_3=0;\ 0\le x_1\le\infty, 0\le x_2\le a_2; U=s_3(y_1,y_2,0);$$
$$\partial G^{(17)}/\partial x_3=0; x_3=a_3;\ 0\le x_1\le\infty, 0\le x_2\le a_2; \partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 9.17 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.18

$$\partial G^{(18)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3;\ \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(18)} = 0;\ x_2 = 0, a_2; 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(18)} = 0;\ x_2 = 0, a_2; 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$G^{(18)} = 0;\ x_3 = 0,\ 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$\partial G^{(18)}/\partial x_3 = 0;\ x_3 = a_3; 0 \le x_1 \le \infty, 0 \le x_2 \le a_2;\ \partial U/\partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.18 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.19

$$G^{(19)} = 0;\ x_1 = 0, 0 \le x_2 \le a_2,\ 0 \le x_3 \le a_3; U = s_1(0, y_2, y_3);$$
$$\partial G^{(19)}/\partial x_2 = 0;\ x_2 = 0;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3;\ \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$\partial G^{(19)}/\partial x_2 = 0;\ x_2 = a_2;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3;\ \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$G^{(19)} = 0;\ x_3 = 0, 0 \le x_1 \le \infty, 0 \le x_3 \le a_3; U = s_3(y_1, y_2, 0);$$
$$\partial G^{(19)}/\partial x_3 = 0;\ x_3 = a_3; 0 \le x_1 \le \infty, 0 \le x_2 \le a_2;\ \partial U/\partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.19 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.20

$$\partial G^{(20)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3;\ \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(20)}/\partial x_2 = 0;\ x_2 = 0;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3;\ \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$\partial G^{(20)}/\partial x_2 = 0;\ x_2 = a_2;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3;\ \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$G^{(20)} = 0;\ x_3 = 0; 0 \le x_1 \le \infty, 0 \le x_3 \le a_3; U = s_3(y_1, y_2, 0);$$
$$\partial G^{(20)}/\partial x_3 = 0;\ x_3 = a_3;\ 0 \le x_1 \le \infty, 0 \le x_2 \le a_2;\ \partial U/\partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.20 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.21

$$G^{(21)} = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_1(0, y_2, y_3);$$
$$G^{(21)} = 0;\ x_2 = 0;\ 0 \le x_1 \le a_1,\ 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(21)}/\partial x_2 = 0;\ x_2 = a_2\ ;\ 0 \le x_1 \le a_1,\ 0 \le x_3 \le a_3;\ \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$G^{(21)} = 0;\ x_3 = 0,\ 0 \le x_1 \le \infty,\ 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$\partial G^{(21)}/\partial x_3 = 0;\ x_3 = a_3,\ 0 \le x_1 \le \infty,\ 0 \le x_2 \le a_2;\ \partial U/\partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.21 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.22

$$\partial G^{(22)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2,\ 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(22)} = 0;\ x_2 = 0; 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(22)}/\partial x_2 = 0;\ x_2 = a_2;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; \partial U/\partial n_2^/ = g_2^/(y_1, a_2, y_3);$$
$$G^{(22)} = 0;\ x_3 = 0, 0 \le x_1 \le \infty, 0 \le x2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$\partial G^{(22)}/\partial x_3 = 0;\ x_3 = a_3, 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3^/ = g_3^/(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.22 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.23

$$G^{(23)} = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_1(0, y_2, y_3);$$
$$\partial G^{(23)}/\partial x_2 = 0;\ x_2 = 0; 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(23)} = 0;\ x_2 = a_2,\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; U = s_2^/(y_1, a_2, y_3);$$
$$G^{(23)} = 0;\ x_3 = 0,\ 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$\partial G^{(23)}/\partial x_3 = 0;\ x_3 = a_3, 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3^/ = g_3^/(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.23 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.24

$$\partial G^{(24)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2,\ 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(24)}/\partial x_2 = 0;\ x_2 = 0,\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(24)} = 0;\ x_2 = a_2,\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3; U = s_2^/(y_1, a_2, y_3);$$
$$G^{(24)} = 0;\ x_3 = 0,\ 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$\partial G^{(24)}/\partial x_3 = 0;\ x_3 = a_3, 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3^/ = g_3^/(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.24 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.25

$$G^{(25)} = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_1(0, y_2, y_3);$$
$$\partial G^{(25)}/\partial x_2 = 0; x_2 = 0; 0 \le x_1 \le \infty, 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$\partial G^{(25)}/\partial x_2 = 0; x_2 = a_2; 0 \le x_1 \le \infty, 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2(y_1, a_2, y_3);$$
$$\partial G^{(25)}/\partial x_3 = 0; x_3 = 0, 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(25)} = 0; x_3 = a_3, 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.25 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.26

$$\partial G^{(26)}/\partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(26)}/\partial x_2 = 0; x_2 = 0; 0 \le x_1 \le \infty, 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$\partial G^{(26)}/\partial x_2 = 0; x_2 = a_2; 0 \le x_1 \le \infty, 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(26)}/\partial x_3 = 0; x_3 = 0, 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(26)} = 0; x_3 = a_3, 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.26 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.27

$$G^{(27)} = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_1(0, y_2, y_3);$$
$$G^{(27)} = 0; x_2 = 0; 0 \le x_1 \le \infty, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(27)}/\partial x_2 = 0; x_2 = a_2; 0 \le x_1 \le \infty, 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(27)}/\partial x_3 = 0; x_3 = 0, 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(27)} = 0; x_3 = a_3, 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.27 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.28

$$\partial G^{(28)}/\partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(28)} = 0; x_2 = 0, \ 0 \le x_1 \le \infty, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(28)}/\partial x_2 = 0; x_2 = a_2; 0 \le x_1 \le \infty, 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(28)}/\partial x_3 = 0; x_3 = 0, 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(28)} = 0; x_3 = a_3, 0 \le x_1 \le \infty, 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.28 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.29

$$G^{(29)} = 0;\ x_1 = 0, 0 \le x_2 \le a_2,\ 0 \le x_3 \le a_3;\ U = s_1(0, y_2, y_3);$$
$$\partial G^{(29)}/\partial x_2 = 0;\ x_2 = 0;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3;\ \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(29)} = 0;\ x_2 = a_2;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3;\ U = s_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(29)}/\partial x_3 = 0;\ x_3 = 0,\ 0 \le x_1 \le \infty, 0 \le x_2 \le a_2;\ \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(29)} = 0;\ x_3 = a_3, 0 \le x_1 \le \infty, 0 \le x_2 \le a_2;\ U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.29 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.30

$$\partial G^{(30)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2,\ 0 \le x_3 \le a_3;\ \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(30)}/\partial x_2 = 0;\ x_2 = 0;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3;\ \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(30)} = 0;\ x_2 = a_2;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3;\ U = s_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(30)}/\partial x_3 = 0;\ x_3 = 0,\ 0 \le x_1 \le \infty, 0 \le x_2 \le a_2;\ \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(30)} = 0;\ x_3 = a_3,\ 0 \le x_1 \le \infty, 0 \le x_2 \le a_2;\ U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.30 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.31

$$\partial G^{(31)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2,\ 0 \le x_3 \le a_3;\ \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(31)} = 0;\ x_2 = 0;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$G^{(31)} = 0;\ x_2 = a_2;\ 0 \le x_1 \le \infty,\ 0 \le x_3 \le a_3;\ U = s_2^{/}(y_1, a_2, y_3);$$
$$G^{(31)} = 0;\ x_3 = 0; 0 \le x_1 \le \infty, 0 \le x_2 \le a_2;\ U = s_3(y_1, y_2, 0);$$
$$G^{(31)} = 0;\ x_3 = a_3; 0 \le x_1 \le \infty, 0 \le x_2 \le a_2;\ U = s_3(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 9.31 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 9.32

$$G^{(32)}=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$\partial G^{(32)}/\partial x_2=0;\ x_2=0;\ 0\le x_1\le\infty,\ 0\le x_3\le a_3; \partial U/\partial n_2=g_2(y_1,0,y_3);$$
$$\partial G^{(32)}/\partial x_2=0;\ x_2=a_2;\ 0\le x_1\le\infty,\ 0\le x_3\le a_3; \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$\partial G^{(32)}/\partial x_3=0;\ x_3=0; 0\le x_1\le\infty, 0\le x_2\le a_2; \partial U/\partial n_3=g_3(y_1,y_2,0);$$
$$\partial G^{(32)}/\partial x_3=0;\ x_3=a_3; 0\le x_1\le\infty, 0\le x_2\le a_2; \partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 9.32 **for semi-bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

(P3C)*10. Bounded Parallelepiped* $(0\le x_1\le a_1; 0\le x_2\le a_2; 0\le x_3\le a_3)$

This section formulates sixty four boundary-value Problem (P3C) s on constructing Green's functions, $G^{(j)}$, $(j=1-64)$, of Poisson's equation for the bounded parallelepiped

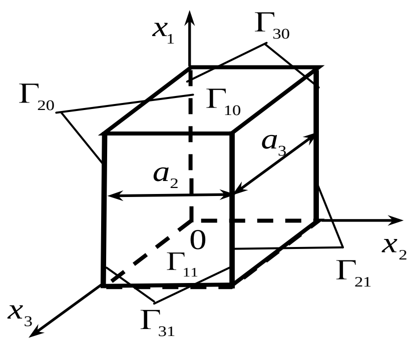

Figure 10: Bounded parallelepiped with boundary rectangular Γ_{10}, Γ_{11}, Γ_{20}, Γ_{21} and Γ_{30}, Γ_{31}.

Problems (P3C)10.1–(P3C)10.64

To construct the Green's functions $G^{(j)}(x,\xi), (j=1-64)$ for Poisson's equation $\nabla^2 G^{(j)}(x,\xi) = -\delta(x-\xi)$ for the bounded parallelepiped $(0\le x_1\le a_1; 0\le x_2\le a_2; 0\le x_3\le a_3)$ under the following homogeneous boundary conditions:

Problem (P3C) 10.1

$$G^{(1)}=0; x_1=0,;0\le x_2\le a_2,\quad 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$G^{(1)}=0; x_1=a_1;0\le x_2\le a_2,\quad 0\le x_3\le a_3; U=s_1^{/}(a_1,y_2,y_3);$$
$$G^{(1)}=0; x_2=0;\ 0\le x_1\le a_1,\ 0\le x_3\le a_3; U=s_2(y_1,0,y_3);$$
$$G^{(1)}=0; x_2=a_2;\ 0\le x_1\le a_1,\ 0\le x_3\le a_3; U=s_2^{/}(y_1,a_2,y_3);$$
$$G^{(1)}=0;\ x_3=0;\quad 0\le x_1\le a_1,\ 0\le x_2\le a_2; U=s_3(y_1,y_2,0);$$
$$G^{(1)}=0;\ x_3=a_3;\quad 0\le x_1\le a_1,\ 0\le x_2\le a_2; U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.1 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.2

$$G^{(2)}=0;\ x_1=0,0\le x_2\le a_2,0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$G^{(2)}=0;\ x_1=a_1,0\le x_2\le a_2,0\le x_3\le a_3; U=s_1^{/}(a_1,y_2,y_3);$$
$$G^{(2)}=0;\ x_2=0;0\le x_1\le a_1,0\le x_3\le a_3; U=s_2(y_1,0,y_3);$$
$$G^{(2)}=0;\ x_2=a_2;0\le x_1\le a_1,0\le x_3\le a_3; U=s_2^{/}(y_1,a_2,y_3);$$
$$\partial G^{(2)}/\partial x_3=0;\ x_3=0;\ 0\le x_1\le a_1,0\le x_2\le a_2; \partial U/\partial n_3=g_3(y_1,y_2,0);$$
$$\partial G^{(2)}/\partial x_3=0;\ x_3=a_3;\ 0\le x_1\le a_1,0\le x_2\le a_2; \partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.2 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.3

$$G^{(3)}=0; x_1=0,;0\le x_2\le a_2,\quad 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$G^{(3)}=0; x_1=a_1;0\le x_2\le a_2,\quad 0\le x_3\le a_3; U=s_1^{/}(a_1,y_2,y_3);$$
$$G^{(3)}=0; x_2=0;\ 0\le x_1\le a_1,\ 0\le x_3\le a_3; s_2(y_1,0,y_3);$$
$$G^{(3)}=0; x_2=a_2;\ 0\le x_1\le a_1,\ 0\le x_3\le a_3; U=s_2^{/}(y_1,a_2,y_3);$$
$$G^{(3)}=0;\ x_3=0;\quad 0\le x_1\le a_1,\ 0\le x_2\le a_2; U=s_3(y_1,y_2,0);$$
$$\partial G^{(3)}/\partial x_3=0; x_3=a_3;\ 0\le x_1\le a_1, 0\le x_2\le a_2; \partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.3 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.4

$$G^{(4)}=0; x_1=0,;0\le x_2\le a_2,\quad 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$G^{(4)}=0; x_1=a_1;0\le x_2\le a_2,\quad 0\le x_3\le a_3; U=s_1^{/}(a_1,y_2,y_3);$$
$$G^{(4)}=0; x_2=0;\ 0\le x_1\le a_1,\ 0\le x_3\le a_3; U=s_2(y_1,0,y_3);$$
$$G^{(4)}=0; x_2=a_2;\ 0\le x_1\le a_1,\ 0\le x_3\le a_3; U=s_2^{/}(y_1,a_2,y_3);_3\ ;$$
$$\partial G^{(4)}/\partial x_3=0; x_3=0,\ 0\le x_1\le a_1, 0\le x_2\le a_2; \partial U/\partial n_3=g_3(y_1,y_3,0);$$
$$G^{(4)}=0;\ x_3=a_3;\ 0\le x_1\le a_1, 0\le x_2\le a_2; U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.4 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.5

$$\partial G^{(5)}/\partial x_1=0;\ x_1=0, a_1, 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1=g_1(0,y_2,y_3);$$
$$\partial G^{(5)}/\partial x_1=0;\ x_1=a_1, 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1^{/}=g_1^{/}(a_1,y_2,y_3);$$
$$\partial G^{(5)}/\partial x_2=0;\ x_2=0; 0\le x_1\le a_1, 0\le x_3\le a_3; \partial U/\partial n_2=g_2(y_1,0,y_3);$$
$$\partial G^{(5)}/\partial x_2=0;\ x_2=a_2; 0\le x_1\le a_1, 0\le x_3\le a_3; \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$G^{(5)}=0;\ x_3=0;\ 0\le x_1\le a_1, 0\le x_2\le a_2; U=s_3(y_1,y_2,0);$$
$$G^{(5)}=0;\ x_3=a_3;\ 0\le x_1\le a_1, 0\le x_2\le a_2; U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.5 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.6

$$\partial G^{(6)}/\partial x_1=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1=g_1(0,y_2,y_3);$$
$$\partial G^{(6)}/\partial x_1=0;\ x_1=a_1, 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1^{/}=g_1^{/}(a_1,y_2,y_3);$$
$$\partial G^{(6)}/\partial x_2=0;\ x_2=0; 0\le x_1\le a_1,\ 0\le x_3\le a_3;\ \partial U/\partial n_2=g_2(y_1,0,y_3);$$
$$\partial G^{(6)}/\partial x_2=0;\ x_2=a_2; 0\le x_1\le a_1,\ 0\le x_3\le a_3; \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$G^{(6)}=0; x_3=0,\ 0\le x_1\le a_1,\ 0\le x_2\le a_2; U=s_3(y_1,y_2,0);$$
$$\partial G^{(6)}/\partial x_3=0;\ x_3=a_3; 0\le x_1\le a_1,\ 0\le x_2\le a_2;\ \partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3)$$

The Answer to Problem (P3C) 10.6 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.7

$$\partial G^{(7)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(7)}/\partial x_1 = 0;\ x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1^{/}(a_1, y_2, y_3);$$
$$\partial G^{(7)}/\partial x_2 = 0;\ x_2 = 0; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$\partial G^{(7)}/\partial x_2 = 0;\ x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(7)}/\partial x_3 = 0;\ x_3 = 0;\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$\partial G^{(7)}/\partial x_3 = 0;\ x_3 = a_3;\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ \partial U/\partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.7 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.8

$$\partial G^{(8)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(8)}/\partial x_1 = 0;\ x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1^{/} = g_1^{/}(a_1, y_2, y_3);$$
$$\partial G^{(8)}/\partial x_2 = 0;\ x_2 = 0; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$\partial G^{(8)}/\partial x_2 = 0;\ x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(8)}/\partial x_3 = 0;\ x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(8)} = 0; x_3 = a_3; 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.8 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.9

$$G^{(9)} = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_1(0, y_2, y_3);$$
$$G^{(9)} = 0;\ x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_1^{/}(a_1, y_2, y_3);$$
$$\partial G^{(9)}/\partial x_2 = 0;\ x_2 = 0; 0 \le x_1 \le a_1,\ 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$\partial G^{(9)}/\partial x_2 = 0;\ x_2 = a_2; 0 \le x_1 \le a_1,\ 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$G^{(9)} = 0;\ x_3 = 0; 0 \le x_1 \le a_1, \quad 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$G^{(9)} = 0;\ x_3 = a_3; 0 \le x_1 \le a_1, \quad 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3)$$

The Answer to Problem (P3C) 10.9 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.10

$$G^{(10)}=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$G^{(10)}=0;\ x_1=a_1, 0\le x_2\le a_2, 0\le x_3\le a_3;\ U=s_1^{/}(a_1,y_2,y_3);$$
$$\partial G^{(10)}/\partial x_2=0;\ x_2=0; 0\le x_1\le a_1, 0\le x_3\le a_3; \partial U/\partial n_2=g_2(y_1,0,y_3);$$
$$\partial G^{(10)}/\partial x_2=0;\ x_2=a_2; 0\le x_1\le a_1, 0\le x_3\le a_3; \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$\partial G^{(10)}/\partial x_3=0;\ x_3=0;\ 0\le x_1\le a_1,\quad 0\le x_2\le a_2; \partial U/\partial n_3=g_3(y_1,y_2,0);$$
$$\partial G^{(10)}/\partial x_3=0;\ x_3=a_3;\ 0\le x_1\le a_1,\quad 0\le x_2\le a_2; \partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.10 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.11

$$G^{(11)}=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$G^{(11)}=0;\ x_1=a_1, 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1^{/}(a_1,y_2,y_3);$$
$$\partial G^{(11)}/\partial x_2=0;\ x_2=0; 0\le x_1\le a_1, 0\le x_3\le a_3; \partial U/\partial n_2=g_2(y_1,0,y_3);$$
$$\partial G^{(11)}/\partial x_2=0;\ x_2=a_2; 0\le x_1\le a_1, 0\le x_3\le a_3; \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$\partial G^{(11)}/\partial x_3=0; x_3=0, 0\le x_1\le a_1, 0\le x_2\le a_2; \partial U/\partial n_3=g_3(y_1,y_2,0);$$
$$G^{(11)}=0;\ x_3=a_3; 0\le x_1\le a_1, 0\le x_2\le a_2; U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.11 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.12

$$G^{(12)}=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$G^{(12)}=0;\ x_1=a_1, 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1^{/}(a_1,y_2,y_3);$$
$$\partial G^{(12)}/\partial x_2=0;\ x_2=0; 0\le x_1\le a_1,\ 0\le x_3\le a_3; \partial U/\partial n_2=g_2(y_1,0,y_3);$$
$$\partial G^{(12)}/\partial x_2=0;\ x_2=a_2; 0\le x_1\le a_1,\ 0\le x_3\le a_3;\ \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$G^{(12)}=0; x_3=0,\ 0\le x_1\le a_1, 0\le x_2\le a_2;\ U=s_3(y_1,y_2,0);$$
$$\partial G^{(12)}/\partial x_3=0;\ x_3=a_3; 0\le x_1\le a_1\ 0\le x_2\le a_2;\ \partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3)$$

The Answer to Problem (P3C) 10.12 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.13

$$\partial G^{(13)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(13)}/\partial x_1 = 0;\ x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1^/ = g_1^/(a_1, y_2, y_3);$$
$$G^{(13)} = 0;\ x_2 = 0; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(13)} = 0;\ x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^/(y_1, a_2, y_3);$$
$$G^{(13)} = 0;\ x_3 = 0; 0 \le x_1 \le a_1, \quad 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$G^{(13)} = 0;\ x_3 = a_3; 0 \le x_1 \le a_1, \quad 0 \le x_2 \le a_2; U = s_3^/(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.13 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.14

$$\partial G^{(14)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(14)}/\partial x_1 = 0;\ x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1^/ = g_1^/(a_1, y_2, y_3);$$
$$G^{(14)} = 0;\ x_2 = 0; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(14)} = 0;\ x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^/(y_1, a_2, y_3);$$
$$\partial G^{(14)}/\partial x_3 = 0; x_3 = 0;\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$\partial G^{(14)}/\partial x_3 = 0; x_3 = a_3;\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U/\partial n_3^/ = g_3^/(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.14 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.15

$$\partial G^{(15)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(15)}/\partial x_1 = 0;\ x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1^/ = g_1^/(a_1, y_2, y_3);$$
$$G^{(15)} = 0;\ x_2 = 0; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(15)} = 0;\ x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^/(y_1, a_2, y_3);$$
$$G^{(15)} = 0;\ x_3 = 0; 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$\partial G^{(15)}/\partial x_3 = 0;\ x_3 = a_3; 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U/\partial n_3^/ = g_3^/(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.15 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.16

$$\partial G^{(16)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(16)}/\partial x_1 = 0;\ x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1^{/} = g_1^{/}(a_1, y_2, y_3);$$
$$G^{(16)} = 0;\ x_2 = 0;\ 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(16)} = 0;\ x_2 = a_2;\ 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(16)}/\partial x_3 = 0; x_3 = 0;\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(16)} = 0;\ x_3 = a_3;\ 0 \le x_1 \le a_1,\quad 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3)..$$

The Answer to Problem (P3C) 10.16 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.17

$$G^{(17)} = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_1(0, y_2, y_3);$$
$$\partial G^{(17)}/\partial x_1 = 0;\ x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1^{/} = g_1^{/}(a_1, y_2, y_3);$$
$$G^{(17)} = 0;\ x_2 = 0; 0 \le x_1 \le a_1,\ 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(17)} = 0;\ x_2 = a_2; 0 \le x_1 \le a_1,\ 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$G^{(17)} = 0;\ x_3 = 0; 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$G^{(17)} = 0;\ x_3 = a_3; 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.17 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.18

$$G^{(18)} = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_1(0, y_2, y_3);$$
$$\partial G^{(18)}/\partial x_1 = 0;\ x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1^{/} = g_1^{/}(a_1, y_2, y_3);$$
$$G^{(18)} = 0;\ x_2 = 0; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(18)} = 0;\ x_2 = a_2;\ 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(18)}/\partial x_3 = 0;\ x_3 = 0;\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$\partial G^{(18)}/\partial x_3 = 0;\ x_3 = a_3;\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U/\partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.18 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.19

$$G^{(19)} = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_1(0, y_2, y_3);$$
$$\partial G^{(19)}/\partial x_1 = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1^{/} = g_1^{/}(a_1, y_2, y_3);$$
$$G^{(19)} = 0; x_2 = 0; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(19)} = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$G^{(19)} = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \quad U = s_3(y_1, y_2, 0);$$
$$\partial G^{(19)}/\partial x_3 = 0; x_3 = a_3; 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U/\partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.19 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.20

$$G^{(20)} = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_1(0, y_2, y_3);$$
$$\partial G^{(20)}/\partial x_1 = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1^{/} = g_1^{/}(a_1, y_2, y_3);$$
$$G^{(20)} = 0; x_2 = 0; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(20)} = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(20)}/\partial x_3 = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \quad \partial U/\partial n_3 = g_3(y_1, y_3, 0);$$
$$G^{(20)} = 0; x_3 = a_3; 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.20 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.21

$$\partial G^{(21)}/\partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(21)} = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(21)}/\partial x_2 = 0; x_2 = 0; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$\partial G^{(21)}/\partial x_2 = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3)$$
$$G^{(21)} = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$G^{(21)} = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.21 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.22

$$\partial G^{(22)} / \partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U / \partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(22)} = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(22)} / \partial x_2 = 0; x_2 = 0; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U / \partial n_2 = g_2(y_1, 0, y_3);$$
$$\partial G^{(22)} / \partial x_2 = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U / \partial n_2^{/} = g_2^{/}(y_1, a_2, y_3)$$
$$\partial G^{(22)} / \partial x_3 = 0; x_3 = 0; 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U / \partial n_3 = g_3(y_1, y_2, 0);$$
$$\partial G^{(22)} / \partial x_3 = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U / \partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.22 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.23

$$\partial G^{(23)} / \partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U / \partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(23)} = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(23)} / \partial x_2 = 0; x_2 = 0; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U / \partial n_2 = g_2(y_1, 0, y_3);$$
$$\partial G^{(23)} / \partial x_2 = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U / \partial n_2^{/} = g_2^{/}(y_1, a_2, y_3)$$
$$G^{(23)} = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$\partial G^{(23)} / \partial x_3 = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U / \partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.23 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.24

$$\partial G^{(24)} / \partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U / \partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(24)} = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(24)} / \partial x_2 = 0; x_2 = 0; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U / \partial n_2 = g_2(y_1, 0, y_3);$$
$$\partial G^{(24)} / \partial x_2 = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U / \partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(24)} / \partial x_3 = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U / \partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(24)} = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.24 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.25

$$G^{(25)}=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$\partial G^{(25)}/\partial x_1=0;\ x_1=a_1, 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1^{/}=g_1^{/}(a_1,y_2,y_3);$$
$$\partial G^{(25)}/\partial x_2=0;\ x_2=0;\ 0\le x_1\le a_1, 0\le x_3\le a_3; \partial U/\partial n_2^{/}=g_2(y_1,0,y_3);$$
$$\partial G^{(25)}/\partial x_2=0;\ x_2=a_2;\ 0\le x_1\le a_1, 0\le x_3\le a_3; \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3)$$
$$G^{(25)}=0;\ x_3=0,\ 0\le x_1\le a_1, 0\le x_2\le a_2; U=s_3(y_1,y_2,0);$$
$$G^{(25)}=0;\ x_3=a_3,\ 0\le x_1\le a_1, 0\le x_2\le a_2;\ U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.25 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.26

$$G^{(26)}=0;\ x_1=0, 0\le x_2\le a_2,\ 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$\partial G^{(26)}/\partial x_1=0;\ x_1=a_1, 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1^{/}=g_1^{/}(a_1,y_2,y_3);$$
$$\partial G^{(26)}/\partial x_2=0;\ x_2=0;\ 0\le x_1\le a_1,\ 0\le x_3\le a_3; \partial U/\partial n_2=g_2(y_1,0,y_3);$$
$$\partial G^{(26)}/\partial x_2=0;\ x_2=a_2;\ 0\le x_1\le a_1,\ 0\le x_3\le a_3; \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$\partial G^{(26)}/\partial x_3=0;\ x_3=0,\ 0\le x_1\le a_1, 0\le x_2\le a_2; \partial U/\partial n_3=g_3(y_1,y_2,0);$$
$$\partial G^{(26)}/\partial x_3=0;\ x_3=a_3,\ 0\le x_1\le a_1, 0\le x_2\le a_2; \partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.26 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.27

$$G^{(27)}=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$\partial G^{(27)}/\partial x_1=0;\ x_1=a_1, 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1^{/}=g_1^{/}(a_1,y_2,y_3);$$
$$\partial G^{(27)}/\partial x_2=0;\ x_2=0;\ 0\le x_1\le a_1, 0\le x_3\le a_3; \partial U/\partial n_2=g_2(y_1,0,y_3);$$
$$\partial G^{(27)}/\partial x_2=0;\ x_2=a_2;\ 0\le x_1\le a_1, 0\le x_3\le a_3; \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$G^{(27)}=0;\ x_3=0, 0\le x_1\le a_1, 0\le x_2\le a_2; U=s_3(y_1,y_2,0);$$
$$\partial G^{(27)}/\partial x_3=0;\ x_3=a_3, 0\le x_1\le a_1, 0\le x_2\le a_2; \partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.27 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.28

$$G^{(28)} = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_1(0, y_2, y_3);$$
$$\partial G^{(28)} / \partial x_1 = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U / \partial n_1^{/} = g_1^{/}(a_1, y_2, y_3);$$
$$\partial G^{(28)} / \partial x_2 = 0; x_2 = 0; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U / \partial n_2 = g_2(y_1, 0, y_3);$$
$$\partial G^{(28)} / \partial x_2 = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U / \partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(28)} / \partial x_3 = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U / \partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(28)} = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.28 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.29

$$\partial G^{(29)} / \partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U / \partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(29)} = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(29)} = 0; x_2 = 0; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(29)} = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$G^{(29)} = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$G^{(29)} = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.29 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.30

$$\partial G^{(30)} / \partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U / \partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(30)} = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(30)} = 0; x_2 = 0; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(30)} = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(30)} / \partial x_3 = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U / \partial n_3 = g_3(y_1, y_2, 0);$$
$$\partial G^{(30)} / \partial x_3 = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U / \partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.30 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.31

$$\partial G^{(31)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3;\ \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(31)} = 0;\ x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$G^{(31)} = 0;\ x_2 = 0;\ 0 \le x_1 \le a_1, 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$G^{(31)} = 0;\ x_2 = a_2;\ 0 \le x_1 \le a_1, 0 \le x_3 \le a_3;\ U = s_2^{/}(y_1, a_2, y_3);$$
$$G^{(31)} = 0;\ x_3 = 0,\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ U = s_3(y_1, y_2, 0);$$
$$\partial G^{(31)}/\partial x_3 = 0;\ x_3 = a_3,\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ \partial U/\partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.31 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.32

$$\partial G^{(32)}/\partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3;\ \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(32)} = 0;\ x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$G^{(32)} = 0;\ x_2 = 0;\ 0 \le x_1 \le a_1, 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$G^{(32)} = 0;\ x_2 = a_2;\ 0 \le x_1 \le a_1, 0 \le x_3 \le a_3;\ U = s_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(32)}/\partial x_3 = 0;\ x_3 = 0,\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(32)} = 0;\ x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.32 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.33

$$G^{(33)} = 0;\ x_1 = 0,\ 0 \le x_2 \le a_2, 0 \le x_3 \le a_3;\ U = s_1(0, y_2, y_3);$$
$$G^{(33)} = 0;\ x_1 = a_1,\ 0 \le x_2 \le a_2, 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$\partial G^{(33)}/\partial x_2 = 0;\ x_2 = 0, 0 \le x_1 \le a_1, 0 \le x_3 \le a_3;\ \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(33)} = 0;\ x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3;\ U = s_2^{/}(y_1, a_2, y_3);$$
$$G^{(33)} = 0;\ x_3 = 0,\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ U = s_3(y_1, y_2, 0);$$
$$G^{(33)} = 0;\ x_3 = a_3,\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.33 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.34

$$
\begin{array}{c}
G^{(34)}=0;x_1=0,\,0\le x_2\le a_2,0\le x_3\le a_3;U=s_1(0,y_2,y_3);\\
G^{(34)}=0;x_1=a_1,\,0\le x_2\le a_2,0\le x_3\le a_3;\;U=s_2(y_1,0,y_3);\\
\partial G^{(34)}/\partial x_2=0;\;x_2=0,0\le x_1\le a_1,0\le x_3\le a_3;\partial U/\partial n_2=g_2(y_1,0,y_3);\\
G^{(34)}=0;\;x_2=a_2;0\le x_1\le a_1,0\le x_3\le a_3;U=s_2^{/}(y_1,a_2,y_3);\\
\partial G^{(34)}/\partial x_3=0;x_3=0,\,0\le x_1\le a_1,0\le x_2\le a_2;\partial U/\partial n_3=g_3(y_1,y_2,0);\\
\partial G^{(34)}/\partial x_3=0;x_3=a_3,\,0\le x_1\le a_1,0\le x_2\le a_2;\partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).
\end{array}
$$

The Answer to Problem (P3C) 10.34 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.35

$$
\begin{array}{c}
G^{(35)}=0;x_1=0,\,0\le x_2\le a_2,0\le x_3\le a_3;U=s_1(0,y_2,y_3);\\
G^{(35)}=0;x_1=a_1,\,0\le x_2\le a_2,0\le x_3\le a_3;\;U=s_2(y_1,0,y_3);\\
\partial G^{(35)}/\partial x_2=0;\;x_2=0,0\le x_1\le a_1,0\le x_3\le a_3;\partial U/\partial n_2=g_2(y_1,0,y_3);\\
G^{(35)}=0;\;x_2=a_2;0\le x_1\le a_1,0\le x_3\le a_3;U=s_2^{/}(y_1,a_2,y_3);\\
G^{(35)}=0;x_3=0,\,0\le x_1\le a_1,0\le x_2\le a_2;U=s_3(y_1,y_2,0);\\
\partial G^{(35)}/\partial x_3=0;x_3=a_3,0\le x_1\le a_1,0\le x_2\le a_2;\partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).
\end{array}
$$

The Answer to Problem (P3C) 10.35 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.36

$$
\begin{array}{c}
G^{(36)}=0;x_1=0,\,0\le x_2\le a_2,0\le x_3\le a_3;U=s_1(0,y_2,y_3);\\
G^{(36)}=0;x_1=a_1,\,0\le x_2\le a_2,0\le x_3\le a_3;\;U=s_2(y_1,0,y_3);\\
\partial G^{(36)}/\partial x_2=0;\;x_2=0,\,0\le x_1\le a_1,0\le x_3\le a_3;\partial U/\partial n_2=g_2(y_1,0,y_3);\\
G^{(36)}=0;\;x_2=a_2;\,0\le x_1\le a_1,0\le x_3\le a_3;U=s_2^{/}(y_1,a_2,y_3);\\
\partial G^{(36)}/\partial x_3=0;x_3=0,\,0\le x_1\le a_1,0\le x_2\le a_2;\partial U/\partial n_3=g_3(y_1,y_2,0);\\
G^{(36)}=0;x_3=a_3,\,0\le x_1\le a_1,0\le x_2\le a_2;\;U=s_3^{/}(y_1,y_2,a_3).
\end{array}
$$

The Answer to Problem (P3C) 10.36 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.37

$$G^{(37)}=0;x_1=0,0\le x_2\le a_2,0\le x_3\le a_3;U=s_1(0,y_2,y_3);$$
$$G^{(37)}=0;x_1=a_1,0\le x_2\le a_2,0\le x_3\le a_3;\ U=s_2(y_1,0,y_3);$$
$$G^{(37)}=0;x_2=0,0\le x_1\le a_1,0\le x_3\le a_3;U=s_2(y_1,0,y_3);$$
$$\partial G^{(37)}/\partial x_2=0;\ x_2=a_2,0\le x_1\le a_1,0\le x_3\le a_3;\partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$G^{(37)}=0;x_3=0,0\le x_1\le a_1,\quad 0\le x_2\le a_2;U=s_3(y_1,y_2,0);$$
$$G^{(37)}=0;x_3=a_3,0\le x_1\le a_1,\quad 0\le x_2\le a_2;\ U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.37 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.38

$$G^{(38)}=0;x_1=0,0\le x_2\le a_2,0\le x_3\le a_3;U=s_1(0,y_2,y_3);$$
$$G^{(38)}=0;x_1=a_1,0\le x_2\le a_2,0\le x_3\le a_3;\ U=s_2(y_1,0,y_3);$$
$$G^{(38)}=0;x_2=0,0\le x_1\le a_1,0\le x_3\le a_3;U=s_2(y_1,0,y_3);$$
$$\partial G^{(38)}/\partial x_2=0;\ x_2=a_2,0\le x_1\le a_1,0\le x_3\le a_3;\partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$\partial G^{(38)}/\partial x_3=0;x_3=0,0\le x_1\le a_1,0\le x_2\le a_2;\partial U/\partial n_3=g_3(y_1,y_2,0);$$
$$\partial G^{(38)}/\partial x_3=0;x_3=a_3,0\le x_1\le a_1,0\le x_2\le a_2;\partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.38 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.39

$$G^{(39)}=0;x_1=0,0\le x_2\le a_2,0\le x_3\le a_3;U=s_1(0,y_2,y_3);$$
$$G^{(39)}=0;x_1=a_1,0\le x_2\le a_2,0\le x_3\le a_3;U=s_2(y_1,0,y_3);$$
$$G^{(39)}=0;\ x_2=0,0\le x_1\le a_1,0\le x_3\le a_3;U=s_2(y_1,0,y_3);$$
$$\partial G^{(39)}/\partial x_2=0;\ x_2=a_2;0\le x_1\le a_1,0\le x_3\le a_3;\partial U/\partial n_3^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$G^{(39)}=0;x_3=0,0\le x_1\le a_1,0\le x_2\le a_2;U=s_3(y_1,y_2,0);$$
$$\partial G^{(39)}/\partial x_3=0;x_3=a_3,0\le x_1\le a_1,0\le x_2\le a_2;\partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.39 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.40

$$G^{(40)}=0;\ x_1=0,\ 0\le x_2\le a_2,\ 0\le x_3\le a_3;\ U=s_1(0,y_2,y_3);$$
$$G^{(40)}=0;\ x_1=a_1,\ 0\le x_2\le a_2,\ 0\le x_3\le a_3;\ U=s_2(y_1,0,y_3);$$
$$G^{(40)}=0;\ x_2=0,\ 0\le x_1\le a_1, 0\le x_3\le a_3;\ U=s_2(y_1,0,y_3);$$
$$\partial G^{(40)}/\partial x_2=0;\ x_2=a_2;\ 0\le x_1\le a_1,\ 0\le x_3\le a_3;\ \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$\partial G^{(40)}/\partial x_3=0;\ x_3=0, 0\le x_1\le a_1, 0\le x_2\le a_2;\ \partial U/\partial n_3=g_3(y_1,y_2,0);$$
$$G^{(40)}=0;\ x_3=a_3, 0\le x_1\le a_1, 0\le x_2\le a_2;\ U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.40 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.41

$$\partial G^{(41)}/\partial x_1=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3;\ \partial U/\partial n_1=g_1(0,y_2,y_3);$$
$$\partial G^{(41)}/\partial x_1=0;\ x_1=a_1,\ 0\le x_2\le a_2, 0\le x_3\le a_3;\ \partial U/\partial n_1^{/}=g_1^{/}(a_1,y_2,y_3);$$
$$G^{(41)}=0;\ x_2=0, 0\le x_1\le a_1, 0\le x_3\le a_3;\ U=s_2(y_1,0,y_3);$$
$$\partial G^{(41)}/\partial x_2=0;\ x_2=a_2;\ 0\le x_1\le a_1, 0\le x_3\le a_3;\ \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$G^{(41)}=0;\ x_3=0,\ 0\le x_1\le a_1, 0\le x_2\le a_2;\ U=s_3(y_1,y_2,0);$$
$$G^{(41)}=0;\ x_3=a_3,\ 0\le x_1\le a_1, 0\le x_2\le a_2;\ U=s_3^{/}(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.41 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.42

$$\partial G^{(42)}/\partial x_1=0;\ x_1=0,\ 0\le x_2\le a_2, 0\le x_3\le a_3;\ \partial U/\partial n_1=g_1(0,y_2,y_3);$$
$$\partial G^{(42)}/\partial x_1=0;\ x_1=a_1,\ 0\le x_2\le a_2, 0\le x_3\le a_3;\ \partial U/\partial n_1^{/}=g_1^{/}(a_1,y_2,y_3);$$
$$G^{(42)}=0;\ x_2=0, 0\le x_1\le a_1, 0\le x_3\le a_3;\ U=s_2(y_1,0,y_3);$$
$$\partial G^{(42)}/\partial x_2=0;\ x_2=a_2;\ 0\le x_1\le a_1, 0\le x_3\le a_3;\ \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);$$
$$\partial G^{(42)}/\partial x_3=0;\ x_3=0,\ 0\le x_1\le a_1, 0\le x_2\le a_2;\ \partial U/\partial n_3=g_3(y_1,y_2,0);$$
$$\partial G^{(42)}/\partial x_3=0;\ x_3=a_3,\ 0\le x_1\le a_1, 0\le x_2\le a_2;\ \partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3)$$

The Answer to Problem (P3C) 10.42 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.43

$$\partial G^{(43)}/\partial x_1 = 0; x_1 = 0,\ 0 \le x_2 \le a_2,\ 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(43)}/\partial x_1 = 0; x_1 = a_1,\ 0 \le x_2 \le a_2,\ 0 \le x_3 \le a_3; \partial U/\partial n_1^{/} = g_1^{/}(a_1, y_2, y_3);$$
$$G^{(43)} = 0;\ x_2 = 0,\ 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(43)}/\partial x_2 = 0;\ x_2 = a_2;\ 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$G^{(43)} = 0; x_3 = 0,\ 0 \le x_1 \le a_1,\ 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$\partial G^{(43)}/\partial x_3 = 0; x_3 = a_3,\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ \partial U/\partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.43 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.44

$$\partial G^{(44)}/\partial x_1 = 0; x_1 = 0,\ 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(44)}/\partial x_1 = 0; x_1 = a_1,\ 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1^{/} = g_1^{/}(a_1, y_2, y_3);$$
$$G^{(44)} = 0;\ x_2 = 0,\ 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(44)}/\partial x_2 = 0;\ x_2 = a_2;\ 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(44)}/\partial x_3 = 0; x_3 = 0,\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(44)} = 0; x_3 = a_3,\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.44 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.45

$$G^{(45)} = 0; x_1 = 0, 0 \le x_2 \le a_2,\ 0 \le x_3 \le a_3; U = s_1(0, y_2, y_3);$$
$$\partial G^{(45)}/\partial x_1 = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1^{/} = g_1^{/}(a_1, y_2, y_3);$$
$$G^{(45)} = 0;\ x_2 = 0, 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(45)}/\partial x_2 = 0;\ x_2 = a_2;\ 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U/\partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$G^{(45)} = 0;\ x_3 = 0,\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$G^{(45)} = 0;\ x_3 = a_3,\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.45 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.46

$$
\begin{array}{c}
G^{(46)}=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1(0,y_2,y_3);\\
\partial G^{(46)}/\partial x_1=0;\ x_1=a_1, 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1^{/}=g_1^{/}(a_1,y_2,y_3);\\
G^{(46)}=0;\ x_2=0, 0\le x_1\le a_1, 0\le x_3\le a_3; U=s_2(y_1,0,y_3);\\
\partial G^{(46)}/\partial x_2=0;\ x_2=a_2; 0\le x_1\le a_1, 0\le x_3\le a_3; \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);\\
\partial G^{(46)}/\partial x_3=0;\ x_3=0,\ 0\le x_1\le a_1, 0\le x_2\le a_2; \partial U/\partial n_3=g_3(y_1,y_2,0);\\
\partial G^{(46)}/\partial x_3=0;\ x_3=a_3,\ 0\le x_1\le a_1, 0\le x_2\le a_2; \partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).
\end{array}
$$

The Answer to Problem (P3C) 10.46 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.47

$$
\begin{array}{c}
G^{(47)}=0;\ x_1=0,\ 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1(0,y_2,y_3);\\
\partial G^{(47)}/\partial x_1=0;\ x_1=a_1,\ 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1^{/}=g_1^{/}(a_1,y_2,y_3);\\
G^{(47)}=0;\ x_2=0,\ 0\le x_1\le a_1, 0\le x_3\le a_3; U=s_2(y_1,0,y_3);\\
\partial G^{(47)}/\partial x_2=0;\ x_2=a_2;\ 0\le x_1\le a_1,\ 0\le x_3\le a_3; \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);\\
G^{(47)}=0;\ x_3=0, 0\le x_1\le a_1, 0\le x_2\le a_2; U=s_3(y_1,y_2,0);\\
\partial G^{(47)}/\partial x_3=0;\ x_3=a_3, 0\le x_1\le a_1, 0\le x_2\le a_2; \partial U/\partial n_3^{/}=g_3^{/}(y_1,y_2,a_3).
\end{array}
$$

The Answer to Problem (P3C) 10.47 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.48

$$
\begin{array}{c}
G^{(48)}=0;\ x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1(0,y_2,y_3);\\
\partial G^{(48)}/\partial x_1=0;\ x_1=a_1, 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1^{/}=g_1^{/}(a_1,y_2,y_3);\\
G^{(48)}=0;\ x_2=0, 0\le x_1\le a_1, 0\le x_3\le a_3; U=s_2(y_1,0,y_3);\\
\partial G^{(48)}/\partial x_2=0;\ x_2=a_2; 0\le x_1\le a_1, 0\le x_3\le a_3; \partial U/\partial n_2^{/}=g_2^{/}(y_1,a_2,y_3);\\
\partial G^{(48)}/\partial x_3=0;\ x_3=0, 0\le x_1\le a_1, 0\le x_2\le a_2; \partial U/\partial n_3=g_3(y_1,y_2,0);\\
G^{(48)}=0;\ x_3=a_3, 0\le x_1\le a_1, 0\le x_2\le a_2;\ U=s_3^{/}(y_1,y_2,a_3).
\end{array}
$$

The Answer to Problem (P3C) 10.48 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C)   10.49

$$\partial G^{(49)} / \partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3;\ \partial U / \partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(49)} = 0;\ x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$G^{(49)} = 0;\ x_2 = 0, 0 \le x_1 \le a_1, 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$\partial G^{(49)} / \partial x_2 = 0;\ x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3;\ \partial U / \partial n_3 = g_2^{/}(y_1, a_2, y_3);$$
$$G^{(49)} = 0;\ x_3 = 0,\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ U = s_3(y_1, y_2, 0);$$
$$G^{(49)} = 0;\ x_3 = a_3,\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.49 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) a 10.50

$$\partial G^{(50)} / \partial x_1 = 0;\ x_1 = 0,\ 0 \le x_2 \le a_2, 0 \le x_3 \le a_3;\ \partial U / \partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(50)} = 0;\ x_1 = a_1,\ 0 \le x_2 \le a_2, 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$G^{(50)} = 0;\ x_2 = 0,\ 0 \le x_1 \le a_1, 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$\partial G^{(50)} / \partial x_2 = 0;\ x_2 = a_2;\ 0 \le x_1 \le a_1, 0 \le x_3 \le a_3;\ \partial U / \partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(50)} / \partial x_3 = 0;\ x_3 = 0,\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ \partial U / \partial n_3 = g_3(y_1, y_2, 0);$$
$$\partial G^{(50)} / \partial x_3 = 0;\ x_3 = a_3,\ 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ \partial U / \partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.50 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C)   10.51

$$\partial G^{(51)} / \partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2,\ 0 \le x_3 \le a_3;\ \partial U / \partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(51)} = 0;\ x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$G^{(51)} = 0;\ x_2 = 0, 0 \le x_1 \le a_1, 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$\partial G^{(51)} / \partial x_2 = 0;\ x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3;\ \partial U / \partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$G^{(51)} = 0;\ x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ U = s_3(y_1, y_2, 0);$$
$$\partial G^{(51)} / \partial x_3 = 0;\ x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ \partial U / \partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.51 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.52

$$\partial G^{(52)} / \partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U / \partial n_1^1 = g_1(0, y_2, y_3);$$
$$G^{(52)} = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$G^{(52)} = 0; x_2 = 0, 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(52)} / \partial x_2 = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U / \partial n_2^{/} = g_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(52)} / \partial x_3 = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U / \partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(52)} = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.52 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.53

$$\partial G^{(53)} / \partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U / \partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(53)} / \partial x_1 = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U / \partial n_1^{/} = g_1^{/}(a_1, y_2, y_3);$$
$$\partial G^{(53)} / \partial x_2 = 0; x_2 = 0, 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U / \partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(53)} = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$G^{(53)} = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$G^{(53)} = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.53 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.54

$$\partial G^{(54)} / \partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U / \partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(54)} / \partial x_1 = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U / \partial n_1^{/} = g_1^{/}(a_1, y_2, y_3);$$
$$\partial G^{(54)} / \partial x_2 = 0; x_2 = 0, \quad 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U / \partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(54)} = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(54)} / \partial x_3 = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U / \partial n_3 = g_3(y_1, y_2, 0);$$
$$\partial G^{(54)} / \partial x_3 = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U / \partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.54 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.55

$$\partial G^{(55)}/\partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(55)}/\partial x_1 = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1^/ = g_1^/(a_1, y_2, y_3);$$
$$\partial G^{(55)}/\partial x_2 = 0; x_2 = 0, 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(55)} = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^/(y_1, a_2, y_3);$$
$$G^{(55)} = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$\partial G^{(55)}/\partial x_3 = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U/\partial n_3^/ = g_3^/(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.55 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.56

$$\partial G^{(56)}/\partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$\partial G^{(56)}/\partial x_1 = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1^/ = g_1^/(a_1, y_2, y_3);$$
$$\partial G^{(56)}/\partial x_2 = 0; x_2 = 0, 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(56)} = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^/(y_1, a_2, y_3);$$
$$\partial G^{(56)}/\partial x_3 = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(56)} = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3^/(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.56 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.57

$$G^{(57)} = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_1(0, y_2, y_3);$$
$$\partial G^{(57)}/\partial x_1 = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1^/ = g_1^/(a_1, y_2, y_3);$$
$$\partial G^{(57)}/\partial x_2 = 0; x_2 = 0, 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(57)} = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^/(y_1, a_2, y_3);$$
$$G^{(57)} = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$G^{(57)} = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3^/(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.57 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.58

$$G^{(58)}=0; x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$\partial G^{(58)}/\partial x_1=0; x_1=a_1, 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1'=g_1'(a_1,y_2,y_3);$$
$$\partial G^{(58)}/\partial x_2=0; x_2=0, 0\le x_1\le a_1, 0\le x_3\le a_3; \partial U/\partial n_2=g_2(y_1,0,y_3);$$
$$G^{(58)}=0; x_2=a_2; 0\le x_1\le a_1, 0\le x_3\le a_3; U=s_2'(y_1,a_2,y_3);$$
$$\partial G^{(58)}/\partial x_3=0; x_3=0, 0\le x_1\le a_1, 0\le x_2\le a_2; \partial U/\partial n_3=g_3(y_1,y_2,0);$$
$$\partial G^{(58)}/\partial x_3=0; x_3=a_3, 0\le x_1\le a_1, 0\le x_2\le a_2; \partial U/\partial n_3'=g_3'(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.58 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.59

$$G^{(59)}=0; x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$\partial G^{(59)}/\partial x_1=0; x_1=a_1, 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1'=g_1'(a_1,y_2,y_3);$$
$$\partial G^{(59)}/\partial x_2=0; x_2=0, 0\le x_1\le a_1, 0\le x_3\le a_3; \partial U/\partial n_2=g_2(y_1,0,y_3);$$
$$G^{(59)}=0; x_2=a_2; 0\le x_1\le a_1, 0\le x_3\le a_3; U=s_2'(y_1,a_2,y_3);$$
$$G^{(59)}=0; x_3=0, 0\le x_1\le a_1, 0\le x_2\le a_2; U=s_3(y_1,y_2,0);$$
$$\partial G^{(59)}/\partial x_3=0; x_3=a_3, 0\le x_1\le a_1, 0\le x_2\le a_2; \partial U/\partial n_3'=g_3'(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.59 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.60

$$G^{(60)}=0; x_1=0, 0\le x_2\le a_2, 0\le x_3\le a_3; U=s_1(0,y_2,y_3);$$
$$\partial G^{(60)}/\partial x_1=0; x_1=a_1, 0\le x_2\le a_2, 0\le x_3\le a_3; \partial U/\partial n_1'=g_1'(a_1,y_2,y_3);$$
$$\partial G^{(60)}/\partial x_2=0; x_2=0, 0\le x_1\le a_1, 0\le x_3\le a_3; \partial U/\partial n_2=g_2(y_1,0,y_3);$$
$$G^{(60)}=0; x_2=a_2; 0\le x_1\le a_1, 0\le x_3\le a_3; U=s_2'(y_1,a_2,y_3);$$
$$\partial G^{(60)}/\partial x_3=0; x_3=0, 0\le x_1\le a_1, 0\le x_2\le a_2; \partial U/\partial n_3=g_3(y_1,y_2,0);$$
$$G^{(60)}=0; x_3=a_3, 0\le x_1\le a_1, 0\le x_2\le a_2; U=s_3'(y_1,y_2,a_3).$$

The Answer to Problem (P3C) 10.60 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.61

$$\partial G^{(61)}/\partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(61)} = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(61)}/\partial x_2 = 0; x_2 = 0, 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(61)} = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$G^{(61)} = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$G^{(61)} = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.61 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.62

$$\partial G^{(62)}/\partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3 \ \partial U/\partial n_1 = g_1(0, y_2, y_3);;$$
$$G^{(62)} = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(62)}/\partial x_2 = 0; x_2 = 0, 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(62)} = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(62)}/\partial x_3 = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U/\partial n_3 = g_3(y_1, y_2, 0);$$
$$\partial G^{(62)}/\partial x_3 = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U/\partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.62 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.63

$$\partial G^{(63)}/\partial x_1 = 0; x_1 = 0, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; \partial U/\partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(63)} = 0; x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3; U = s_2(y_1, 0, y_3);$$
$$\partial G^{(63)}/\partial x_2 = 0; x_2 = 0, 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; \partial U/\partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(63)} = 0; x_2 = a_2; 0 \le x_1 \le a_1, 0 \le x_3 \le a_3; U = s_2^{/}(y_1, a_2, y_3);$$
$$G^{(63)} = 0; x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; U = s_3(y_1, y_2, 0);$$
$$\partial G^{(63)}/\partial x_3 = 0; x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2; \partial U/\partial n_3^{/} = g_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.63 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)

Problem (P3C) 10.64

$$\partial G^{(64)} / \partial x_1 = 0;\ x_1 = 0, 0 \le x_2 \le a_2,\ 0 \le x_3 \le a_3;\ \partial U / \partial n_1 = g_1(0, y_2, y_3);$$
$$G^{(64)} = 0;\ x_1 = a_1, 0 \le x_2 \le a_2, 0 \le x_3 \le a_3;\ U = s_2(y_1, 0, y_3);$$
$$\partial G^{(64)} / \partial x_2 = 0;\ x_2 = 0, 0 \le x_1 \le a_1, 0 \le x_3 \le a_3;\ \partial U / \partial n_2 = g_2(y_1, 0, y_3);$$
$$G^{(64)} = 0;\ x_2 = a_2; 0 \le x_1 \le a_1,\quad 0 \le x_3 \le a_3;\ U = s_2^{/}(y_1, a_2, y_3);$$
$$\partial G^{(64)} / \partial x_3 = 0;\ x_3 = 0, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ \partial U / \partial n_3 = g_3(y_1, y_2, 0);$$
$$G^{(64)} = 0;\ x_3 = a_3, 0 \le x_1 \le a_1, 0 \le x_2 \le a_2;\ U = s_3^{/}(y_1, y_2, a_3).$$

The Answer to Problem (P3C) 10.64 **for bounded parallelepiped** (Green's function for Poisson's equation in Cartesian coordinates) can be found in the book: Seremet V.D. Handbook of Green's functions and matrices - WIT press, Southampton and Boston, UK&USA, 2003, Book 304 p. + CD ROM, 232 p. (in English)