

РАСЧЁТНО-ГРАФИЧЕСКОЕ ЗАДАНИЕ
по математическому анализу

Задание 10. Найти объём тела, ограниченного поверхностями:

10.1 $x + y + z = 4, x = 3, y = 2, x = 0, y = 0, z = 0$

10.2 $x = 20\sqrt{y}, x = 5\sqrt{y}, z = 0, y + z = \frac{1}{2}$

10.3 $z = 3, z = 30, x^2 + y^2 = 2, x = \sqrt{y}, x = 0$

10.4 $z = x^2 + y^2, y = x^2, y = 1, z = 0$

10.5 $2z = 4 - x^2 - y^2, 2 = x + y, z = 0 (x \geq 0, y \geq 0)$

10.6 $x + y = 2, z = \frac{12}{5}x, x = \sqrt{y}, z = 0$

10.7 $z = x + y, x + y = 1, x = 0, y = 0, z = 0$

10.8 $z = y^2, 2x + 3y = 6, x = 0, z = 0$

10.9 $x^2 = 4y, y + z = 1, y - z = 1$

10.10 $z = 4 - x^2, 2x + y = 4, x = 0, y = 0, z = 0 (x \geq 0)$

10.11 $z = \frac{y^2}{2}, 2x + 3y - 12 = 0, x = 0, y = 0, z = 0$

10.12 $z = 9 - y^2, x + y = 3, x = 2y, x = 0, z = 0$

10.13 $x^2 + y^2 = 2, x = \sqrt{y}, z = 15y, x = 0, z = 0$

10.14 $z = 4 - y^2, y = \frac{x^2}{2}, z = 0$

10.15 $z = x^2 + y^2, y = \sqrt{x}, x = 1, y = 0, z = 0$

10.16 $y^2 = 2x, x^2 = 4 - z, z = 0$

10.17 $y = \sqrt{2x}, y = 16\sqrt{2x}, z = 0, x + z = 2$

10.18 $2x + 3y - 12 = 0, z = \frac{1}{2}x^2, x = 0, y = 0, z = 0$

10.19 $x^2 + y^2 = 8, y = \sqrt{2x}, z = \frac{15}{11}x, z = 0$

10.20 $x + y = 4, x = \sqrt{2y}, z = \frac{3}{5}x, z = 0$

10.21 $x^2 = 2y, y + z = 1, 2y + z = 2$

10.22 $3x + y = 2, 3x + 2y = 4, x + y + z = 2, y = 0, z = 0$

$$10.23 \quad z = 8(x^2 + y^2) + 3, \quad z = 16x + 3$$

$$10.24 \quad x^2 + y^2 = 8\sqrt{2}x, \quad z = x^2 + y^2 - 64, \quad z = 0 \quad (z \geq 0)$$

$$10.25 \quad y = x^2, \quad y = 1, \quad x + y + z = 4, \quad z = 0$$

$$10.26 \quad x^2 = 3y, \quad y + 4z = 2, \quad y + 2z = 2$$

$$10.27 \quad x^2 + y^2 = 6, \quad x = \sqrt{y}, \quad x = 0, \quad z = 5y, \quad z = 0$$

$$10.28 \quad y = 2\sqrt{x}, \quad y = 3\sqrt{x}, \quad z = 0, \quad x - z = 3$$

$$10.29 \quad x^2 = 5y, \quad y + 2z - 3 = 0, \quad 2y + 5z - 6 = 0$$

$$10.30 \quad x^2 + y^2 = 12, \quad y = 2\sqrt{x}, \quad y = 0, \quad z - 3x = 0, \quad z = 0$$