

$$4014. z = x + y, (x^2 + y^2)^2 = 2xy, z = 0 \quad (x > 0, y > 0).$$

$$4015. z = x^2 + y^2, x^2 + y^2 = x, x^2 + y^2 = 2x, z = 0.$$

$$4016. x^2 + y^2 + z^2 = a^2, x^2 + y^2 > a|x| \quad (a > 0).$$

$$4017. x^2 + y^2 - az = 0, (x^2 + y^2)^2 = a^2(x^2 - y^2), z = 0 \quad (a > 0).$$

$$4018. z = e^{-(x^2+y^2)}, z = 0, x^2 + y^2 = R^2.$$

$$4019. z = c \cos \frac{\pi \sqrt{x^2 + y^2}}{2a}, z = 0, y = x \operatorname{tg} \alpha,$$

$$y = x \operatorname{tg} \beta \quad (a > 0, c > 0, 0 \leq \alpha < \beta \leq 2\pi).$$

$$4020. z = x^2 + y^2, z = x + y.$$

Найти объемы тел, ограниченных следующими поверхностями (параметры предполагаются положительными):

$$4021. \frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1, \frac{x^2}{a^2} + \frac{y^2}{b^2} = \frac{z^2}{c^2} \quad (z > 0).$$

$$4022. \frac{x^2}{a^2} + \frac{y^2}{b^2} - \frac{z^2}{c^2} = -1, \frac{x^2}{a^2} + \frac{y^2}{b^2} = 1.$$

$$4023. \frac{x^2}{a^2} + \frac{y^2}{b^2} = \frac{z}{c}, \frac{x^2}{a^2} + \frac{y^2}{b^2} = \frac{x}{a} + \frac{y}{b}, z = 0.$$

$$4024. \left(\frac{x^2}{a^2} + \frac{y^2}{b^2} \right)^2 + \frac{z}{c} = 1, z = 0.$$

$$4025. \left(\frac{x}{a} + \frac{y}{b} \right)^2 + \frac{z^2}{c^2} = 1, x = 0, y = 0, z = 0.$$

$$4026. \frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1, \left(\frac{x^2}{a^2} + \frac{y^2}{b^2} \right)^2 = \frac{x^2}{a^2} - \frac{y^2}{b^2}.$$

$$4027. z^2 = xy, x + y = a, x + y = b \quad (0 < a < b).$$

$$4028. z = x^2 + y^2, xy = a^2, xy = 2a^2, y = \frac{x}{2}, y = 2x, z = 0.$$

$$4029. z = xy, x^2 = y, x^2 = 2y, y^2 = x, y^2 = 2x, z = 0.$$

$$4030. z = c \sin \frac{\pi xy}{a^2}, z = 0, xy = a^2, y = \alpha x, y = \beta x \quad (0 < \alpha < \beta; x > 0).$$

$$4031. z = x^{3/2} + y^{3/2}, z = 0, x + y = 1, x = 0, y = 0.$$

$$4032. \frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z}{c} = 1, \left(\frac{x}{a} \right)^{2/3} + \left(\frac{y}{b} \right)^{2/3} = 1, z = 0.$$