

$$1. \begin{vmatrix} 5 & 10 \\ 7 & 12 \\ 11,3 & 5 \\ 25 & 30 \end{vmatrix} + 2. \begin{vmatrix} 5 & 10 \\ 7 & 12 \\ 11,3 & 5 \\ 25 & 30 \end{vmatrix} = 9. \begin{vmatrix} 5 & 10 \\ 7 & 12 \\ 11,3 & 5 \\ 25 & 30 \end{vmatrix} = \begin{vmatrix} 45 & 90 \\ 63 & 108 \\ 101,7 & 45 \\ 225 & 270 \end{vmatrix}$$

2.1

$$3x - 2y + 5z = 7$$

$$7x + 4y - 8z = 3$$

$$5x - 3y - 4z = -12$$

$$D = \begin{vmatrix} 3 & -2 & 5 \\ 7 & 4 & -8 \\ 5 & -3 & -4 \end{vmatrix} = (3 \cdot 4 \cdot (-4)) + ((-2) \cdot (-8) \cdot 5) + (7 \cdot (-3) \cdot 5) -$$

$$= -(5 \cdot 4 \cdot 5) - ((-2) \cdot 7 \cdot (-4)) - (3 \cdot (-8) \cdot (-3)) =$$

$$= -48 + 80 - 105 - 100 - 56 - 72 = -301$$

$$D_x = \begin{vmatrix} 7 & -2 & 5 \\ 3 & 4 & -8 \\ -12 & -3 & -4 \end{vmatrix} = (7 \cdot 4 \cdot (-4)) + ((-2) \cdot (-8) \cdot (-12)) + (3 \cdot (-3) \cdot 5) -$$

$$= -(5 \cdot 4 \cdot (-12)) - ((-2) \cdot 3 \cdot (-4)) - (7 \cdot (-8) \cdot (-3)) =$$

$$= -112 - 192 - 45 + 240 - 24 - 168 = -301$$

$$D_y = \begin{vmatrix} 3 & 7 & 5 \\ 7 & 3 & -8 \\ 5 & -12 & -4 \end{vmatrix} = (3 \cdot 3 \cdot (-4)) + (7 \cdot (-8) \cdot 5) + (7 \cdot (-12) \cdot 5) -$$

$$= (5 \cdot 3 \cdot 5) - (7 \cdot 7 \cdot (-4)) - (3 \cdot (-8) \cdot (-12)) =$$

$$= -36 - 280 - 420 - 75 + 196 - 288 = -903$$

$$D_z = \begin{vmatrix} 3 & -2 & 7 \\ 7 & 4 & 3 \\ 5 & -3 & -12 \end{vmatrix} = (3 \cdot 4 \cdot (-12)) + ((-2) \cdot 3 \cdot 5) + (7 \cdot (-3) \cdot 7) -$$

$$= -(7 \cdot 4 \cdot 5) - ((-2) \cdot 7 \cdot (-12)) - (3 \cdot 3 \cdot (-3)) =$$

$$= -144 - 30 - 147 - 140 - 168 + 27 = -602$$

$$x = -301 / -301 = 1$$

$$y = -903 / -301 = 3$$

$$z = -602 / -301 = 2$$

Ранговое уравнение
линейное

Вся сист. уравн. линейна

2.2

$$x^2 + y \cdot x - 9 = 0$$

$$x - y/5 = 0$$

$$5x - y = 0$$

$$-y = -5x$$

$$y = 5x$$

$$x^2 + 5x \cdot x - 9 = 0$$

$$x^2 + 5x^2 - 9 = 0$$

$$6x^2 = 9$$

$$x^2 = \frac{3}{2}$$

$$x = \pm \sqrt{\frac{3}{2}} \quad y = \pm 5\sqrt{\frac{3}{2}}$$

Система нелинейная

1-е квадратное

2-е линейное

3. $S = x \cdot y$ $P = 2x + 2y$

$$x \cdot y = 48$$

$$2x + 2y = 28$$

$$2x = 28 - 2y$$

$$x = 14 - y$$

$$(14 - y) \cdot y = 48$$

$$14y - y^2 = 48$$

$$y^2 - 14y + 48 = 0$$

$$D = b^2 - 4ac = 14^2 - 4 \cdot 1 \cdot 48 = 4$$

$$y_1 = \frac{-b + \sqrt{D}}{2a} = \frac{16}{2} = 8$$

$$y_2 = \frac{-b - \sqrt{D}}{2a} = \frac{12}{2} = 6$$

Если $y = 8$, то $x \cdot 8 = 48 \Rightarrow x = 6$

Если $y = 6$, то $x \cdot 6 = 48 \Rightarrow x = 8$

Стороны прямоугольника = 6 и 8 см.