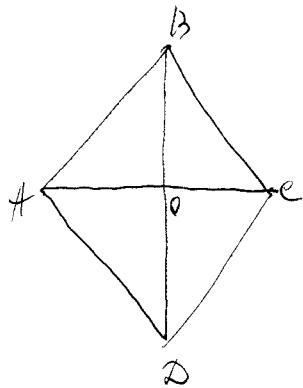




$$\begin{aligned} AC &= x \\ BD &= x + 4 \\ S &= 96 \end{aligned}$$

$$S_{ABCD} = 2 \cdot S_{ABD}$$

$$S_{ABCD} = 2 \cdot \frac{AC}{2} \cdot BD \cdot \frac{1}{2}$$

$$S_{ABCD} = \frac{AC \cdot BD}{2}$$

$$96 = \frac{x(x+4)}{2}$$

$$x^2 + 4x = 192$$

$$x^2 + 4x - 192 = 0$$

$$D = \sqrt{784} = 28$$

$$x_1 = \frac{-4 + 28}{2} = 12$$

$$x_2 = \frac{-4 - 28}{2} \text{ - не подходит.}$$

$$AC = 12$$

$$BD = 12 + 4 = 16.$$

$\triangle AOB$ прямоугольный

$$AB = \sqrt{AO^2 + BO^2} \quad AO = \frac{1}{2} AC = 6$$

$$AB = \sqrt{6^2 + 8^2} = \sqrt{100} \quad BO = \frac{1}{2} BD = 8$$

$$AB = 10.$$