

$$\begin{cases} x \cdot y = 60 \\ x^2 + y^2 = 13^2 \end{cases} \Rightarrow \begin{cases} x = \frac{60}{y} \\ x^2 + y^2 = 13^2 \end{cases}$$

$$\left(\frac{60}{y}\right)^2 + y^2 = 169 \quad | \cdot y^2, \text{ т.к. } y^2 \neq 0$$

$$3600 + y^4 = 169y^2$$

$$y^4 - 169y^2 + 3600 = 0$$

высложим $y^2 = t$

$$t^2 - 169t + 3600 = 0$$

$$\begin{aligned} D &= 169^2 - 4 \cdot 3600 = 28561 - 14400 = \\ &= 14161 = 119^2 \end{aligned}$$

$$t_1 = \frac{169 + 119}{2} = 144$$

$$t_2 = \frac{169 - 119}{2} = 25$$

$$\Rightarrow \begin{cases} y = 12 \\ y = 5 \end{cases} \Rightarrow$$

$$\Rightarrow \begin{cases} y = 5 \\ x = 12 \end{cases}$$

$$P = 2(5 + 12) = 2 \cdot 17 = \boxed{34}$$