

$$L: 2x + 3y - 12 = 0$$

$$B: \frac{x^2}{36} + \frac{y^2}{16} = 1$$

$$\begin{cases} 2x + 3y - 12 = 0 \\ 4x^2 + 3y^2 = 144 \end{cases} \quad \begin{cases} y = -\frac{2}{3}x + 4 \\ 4x^2 + 3\left(-\frac{2}{3}x + 4\right)^2 = 144 \end{cases}$$

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$$4x^2 + 3\left(\frac{4}{3}x^2 + 16 - \frac{16}{3}x\right) = 144$$

$$4x^2 + 4x^2 + 144 - 48x = 144$$

$$8x^2 - 48x = 0$$

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$$x = \frac{48}{8} = 6 \quad \text{or} \quad x = 0$$

$$x(x - 6) = 0$$

$$x = 0$$

$$x = 6$$

$$\begin{cases} y = -\frac{2}{3}x + 4 \\ x = 0 \end{cases} \quad \begin{cases} y = 4 \end{cases} \quad P(0; 4)$$

$$\begin{cases} y = -\frac{2}{3}x + 4 \\ x = 6 \end{cases} \quad \begin{cases} y = -\frac{2}{3}(6) \\ y = 0 \end{cases} \quad P(6; 0)$$

$$d = \sqrt{(0-4)^2 + (6-0)^2} = \sqrt{16 + 36} = \sqrt{52} = 2\sqrt{13}$$