

Lista de exercícios - potência de um ponto

1.

$$AC \cdot AD = AB \cdot AB$$

$$x_1 \cdot (x_1 + x_2) = 8 \cdot 8$$

$$x_1^2 + x_1 \cdot x_2 = 64$$

$$x_1^2 = 64 - 64$$

$$x_1^2 = 64/2 \rightarrow x_1^2 = 32$$

$$\text{alternativa (E), } x_1 = \sqrt{32} \rightarrow x_1 = 4\sqrt{2}$$

2.

$$PA = 3PC \quad PC \cdot PB = PA \cdot PA$$

$$PC \cdot PB = 3PC \cdot 3PC$$

$$PB = 3PC \cdot 3PC$$

$$PC$$

$$PP = 9PC \quad \text{alternativa (B), } PP = 9PC$$

3.

$$AB \cdot AC = AT \cdot AT \quad A = 5^2 - 4 \cdot 1 \cdot (-36)$$

$$x_1 \cdot (x_1 + 5) = 6 \cdot 6 \quad A = 25 + 144$$

$$x_1^2 + 5x_1 = 36 \quad A = 169$$

$$T = 8,5 \text{ cm} \quad x_1^2 + 5x_1 - 36 = 0$$

$$AT = 6 \text{ cm}$$

$$x_1 = \frac{-5 \pm \sqrt{169}}{2} \quad \rightarrow x_1 = \frac{-5 - 13}{2} = -9 \quad \text{(não convém)}$$

$$x_1 = \frac{-5 + 13}{2} \quad \rightarrow x_1 = \frac{8}{2} = 4$$

$$\text{alternativa (E), } x_1 = 4$$

4.

$$AE \cdot EP = 3 \quad AE \cdot EB = CE \cdot ED \quad CE = ED$$

$$3 = ED^2 \quad \sqrt{3} = ED$$

$$CD = \sqrt{3} \quad \text{alternativa (B), } CD = \sqrt{3}$$

5.

$$8 \cdot 18 = 4 \cdot (4 + x_1 + x_2)$$

$$144 = 16 + 4x_1 + 4x_2$$

$$144 - 16 = 8x_1$$

$$128 = 8x_1 \quad x_1 = 16$$

$$AB = 8 \text{ cm}$$

$$BC = 10 \text{ cm}$$

$$AD = 4 \text{ cm}$$

$$\text{perímetro } ADC = 16 + 20 + 18$$

$$\text{perímetro } ADC = 54 \text{ cm}$$

$$\text{alternativa (E), } x_1 = 16$$