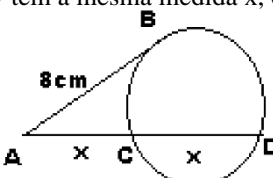


Tarefa Básica – Daniel Gonçalves Ribeiro **POTÊNCIA DO PONTO**

01.(FEI)- Na figura abaixo, o segmento AB é tangente à circunferência no ponto B e mede 8cm. Se AC e CD têm a mesma medida x, o valor de x, em cm, é:

- (A) 4
(B) $4\sqrt{3}$
(C) 8
(D) $3\sqrt{2}$
(E) $4\sqrt{2}$

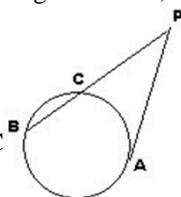


$$\begin{aligned} AB^2 &= AC \cdot AD \\ AB &= 8 \text{ cm} \\ AC &= CD = x \\ AD &= (AC + CD) \end{aligned}$$

$$\begin{aligned} 8^2 &= x(x + x) & \rightarrow x^2 &= 32 \\ 64 &= x \cdot 2 \cdot x & x &= \sqrt{32} \\ 64 &= 2 \cdot x^2 & x &= 4\sqrt{2} \\ 64 / 2 &= x^2 \end{aligned}$$

02.(UEPA)- Na figura abaixo, sabe-se que $PA = 3PC$. Então,

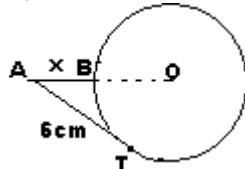
- (A) $PB = 4PC$
(B) $PB = 9PC$
(C) $2PB = 3PC$
(D) $PB = 3PC$
(E) $3PB = 4PC$



$$\begin{aligned} PB/PA &= PA/PC \Rightarrow PA^2 = PB \cdot PC \\ (3PC)^2 &= PB \cdot PC \\ 9PC^2 &= PB \cdot PC \\ \frac{9PC^2}{PC} &= PB \\ PB &= 9PC \end{aligned}$$

03. (FUVEST) – O raio da circunferência da figura é 2,5cm e $AT = 6$ cm (T é ponto de tangência). Então, $AB = x$ vale:

- (A) 2
(B) 9
(C) 3
(D) 2,5
(E) 4



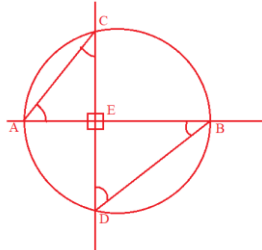
$$\begin{aligned} d &= 2 \cdot BO = 2 \cdot 2,5 = 5 \text{ cm} \\ 6^2 &= x \cdot (5 + x) \\ 36 &= x^2 + 5x \\ x^2 + 5x - 36 &= 0 \end{aligned}$$

$$\begin{aligned} x &= \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \\ x &= \frac{-5 \pm \sqrt{5^2 - 4 \cdot 1 \cdot (-36)}}{2 \cdot 1} \\ x &= \frac{-5 \pm \sqrt{25 + 144}}{2} \\ x &= \frac{-5 \pm \sqrt{169}}{2} \end{aligned}$$

$x' = \frac{-5 + 13}{2} = \frac{8}{2} = 4$ (Resposta)
 $x'' = \frac{-5 - 13}{2} = \frac{-18}{2} = -9$ (Rejeita)

04. (UFMG) – Num círculo, a corda CD é perpendicular ao diâmetro AB no ponto E. Se $AE = 3$, então a medida da corda CD é:

- (A) $\sqrt{3}$
(B) $2\sqrt{3}$
(C) $3\sqrt{3}$
(D) 3
(E) 6

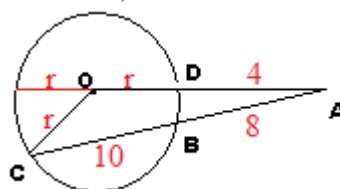
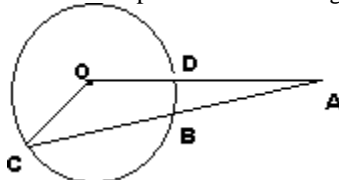


$$\begin{aligned} CD &\text{ é perpendicular ao diâmetro AB no ponto E} \\ AE \cdot EB &= CE \cdot ED = 3 \end{aligned}$$

$$\begin{aligned} \text{O diâmetro perpendicular à corda divide-a ao meio, então } CE &= ED \\ \text{Assim:} \\ 3 &= CE^2 & CD &= 2CE \\ CE &= \sqrt{3} & CD &= 2\sqrt{3} \end{aligned}$$

05.(CESGRANRIO)- Na figura a seguir, $AB = 8$ cm, $BC = 10$ cm, $AD = 4$ cm e o ponto O é o centro da circunferência. O perímetro do triângulo AOC mede, em centímetros:

- (A) 36
(B) 45
(C) 48
(D) 50
(E) 54



$$\begin{aligned} AD \cdot AQ &= AB \cdot AC \\ 4 \cdot (4 + 2r) &= 8 \cdot (8 + 10) \\ 16 + 8r &= 144 \\ 8r &= 128 \\ r &= 16 \end{aligned}$$

$$\begin{aligned} \text{Logo o perímetro do triângulo AOC:} \\ OA + OC + AC &= \\ (16 + 4) + 16 + (10 + 8) &= \\ 20 + 16 + 18 &= 54 \end{aligned}$$

Respostas da Tarefa Básica

01. (E)
02. (B)
03. (E)
04. (B)
05. (E)