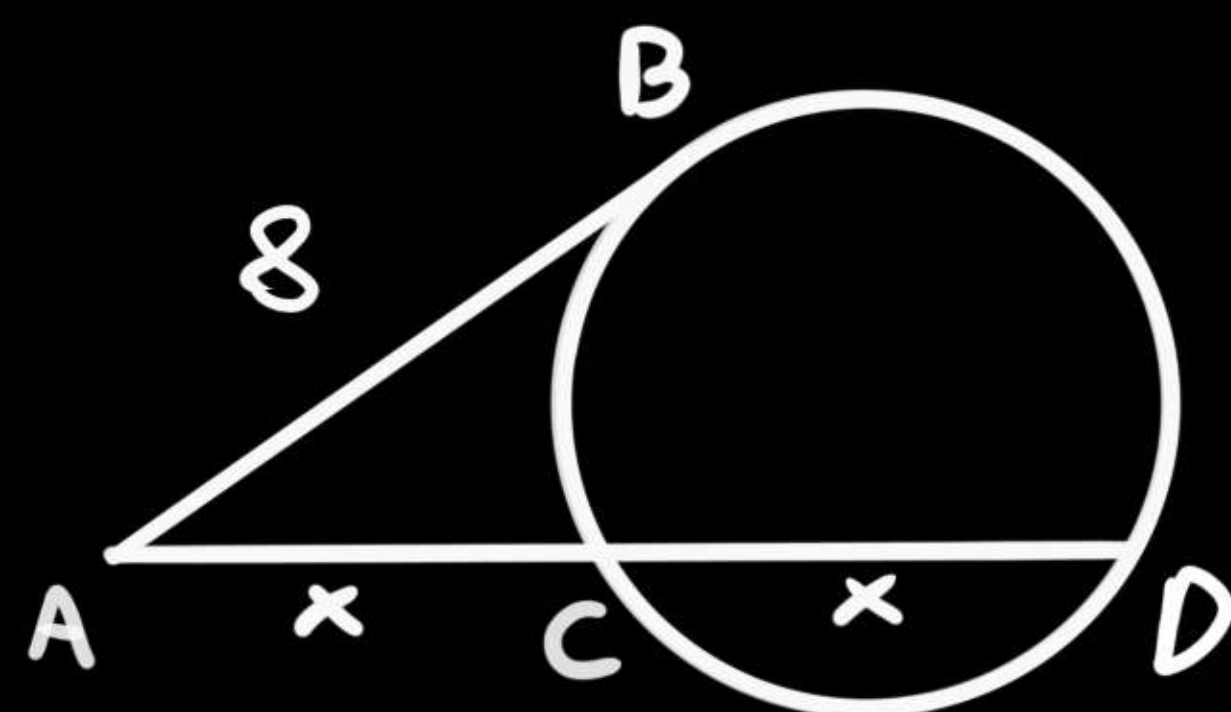
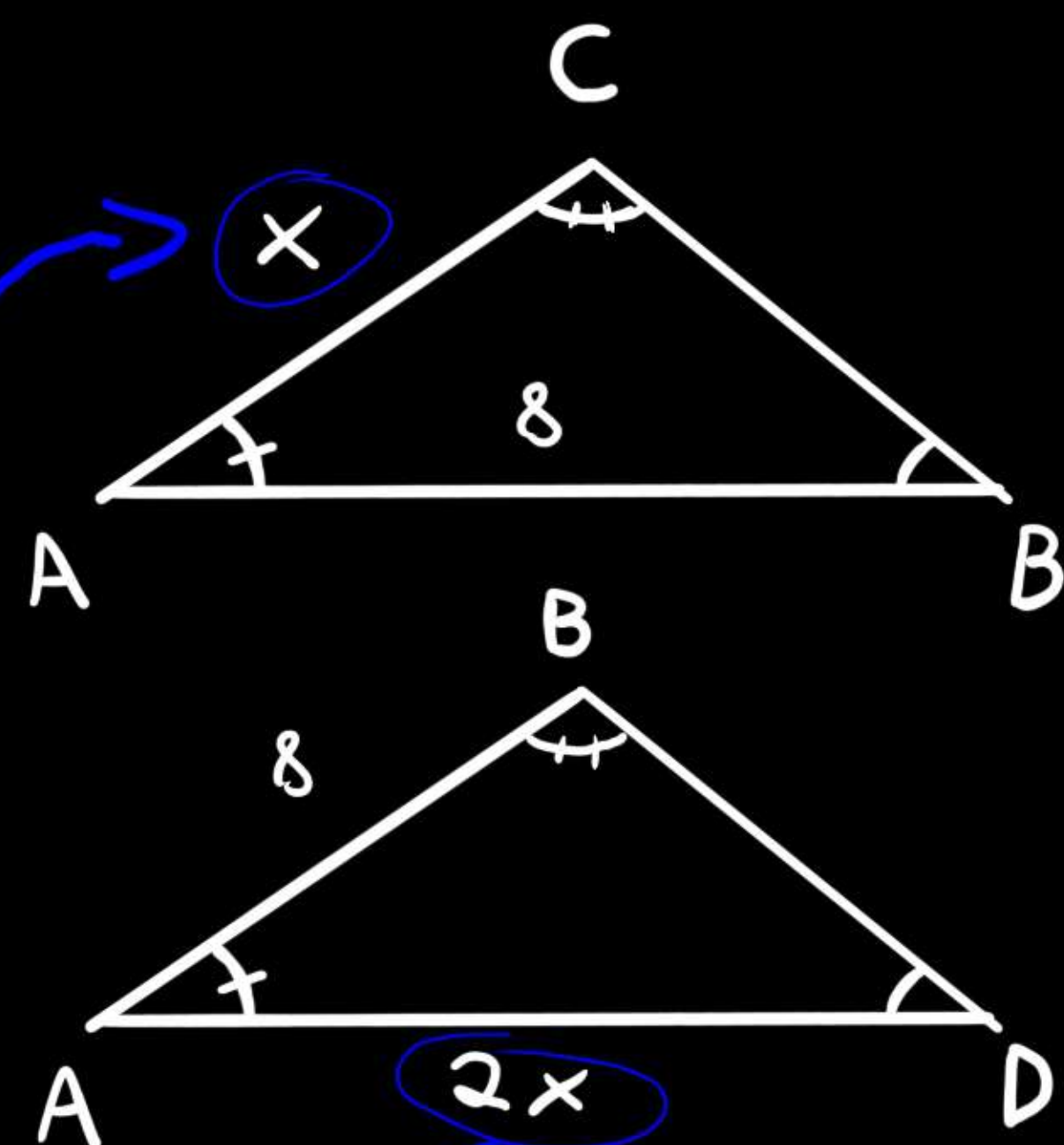
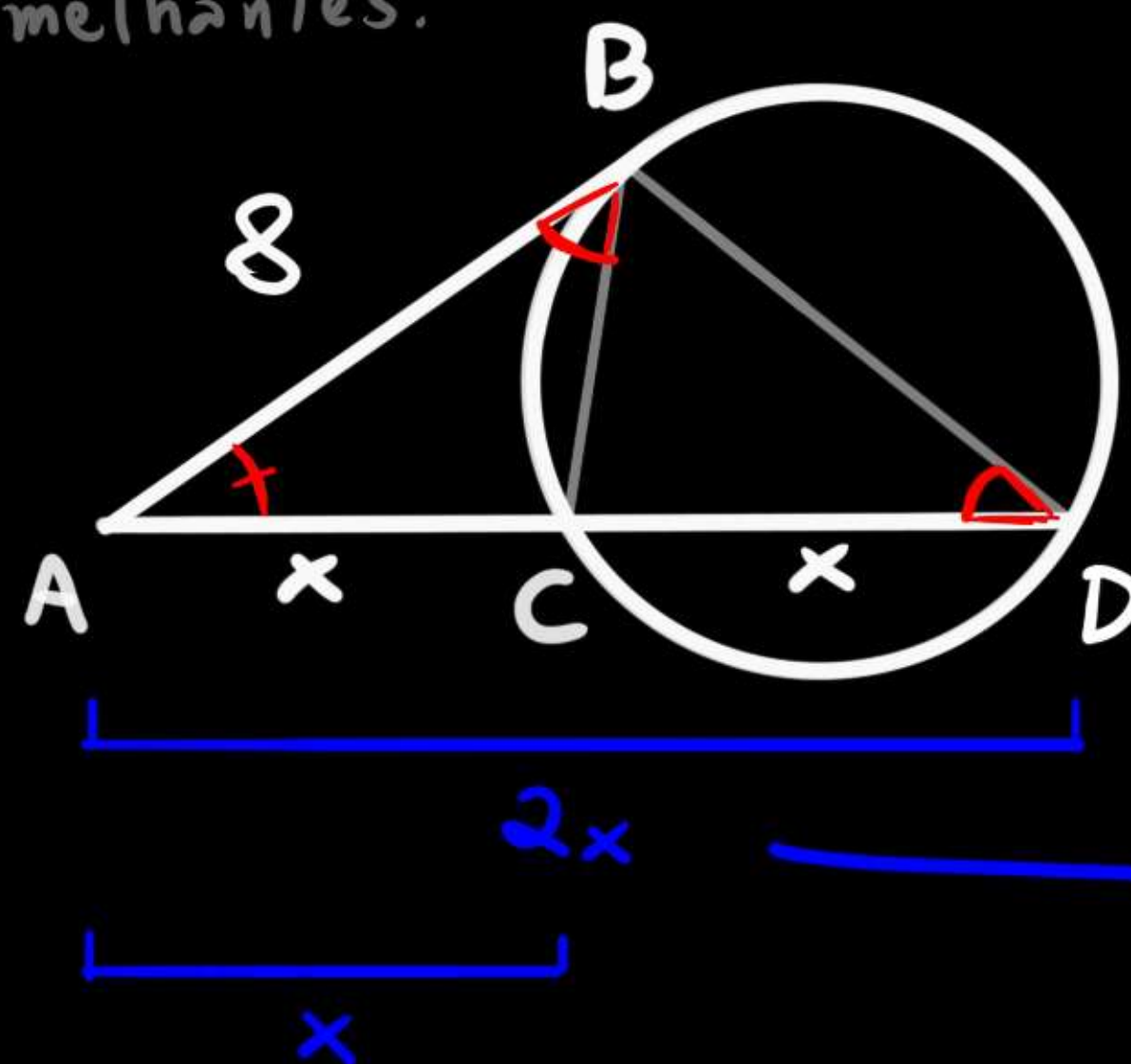


1. Quanto mede  $x$ ?



I. ligando os pontos B e D e observamos os ângulos, teremos 2 triângulos semelhantes.



$$\triangle ABC \sim \triangle ADB$$

$$\frac{AC}{AB} = \frac{AB}{AD}$$

$$\frac{x}{8} = \frac{8}{2x}$$

↓

$$2x^2 = 8^2$$

↓

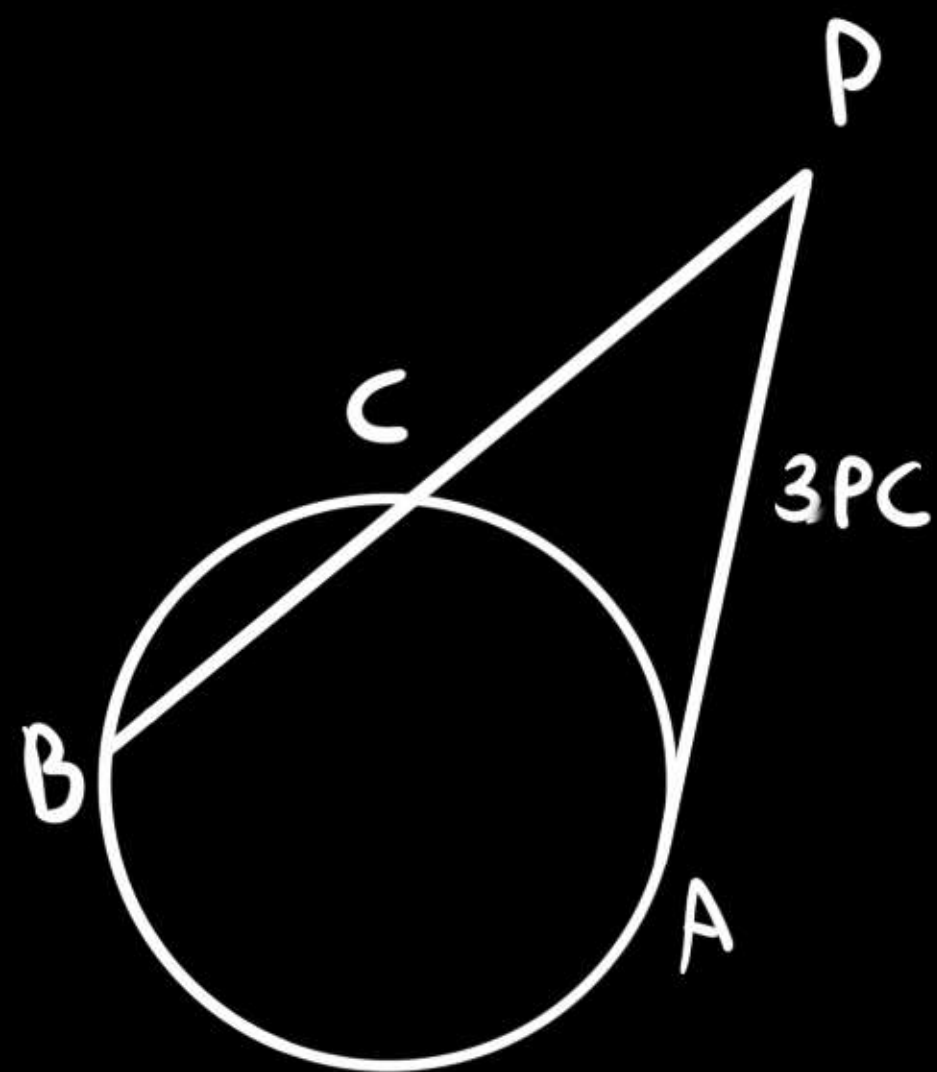
$$x^2 = \frac{4^2 \cdot 2^2}{2} \Rightarrow x = \sqrt{4^2 \cdot 2} \Rightarrow x = 4\sqrt{2} \text{ (E)}$$

II. Ao relacionar os ângulos, podemos usar uma propriedade de triângulos semelhantes.

Ao dividir dois lados - um de cada triângulo - que sejam opostos a um ângulo de mesmo grau, esse quociente é o mesmo para uma outra divisão que siga o mesmo critério.

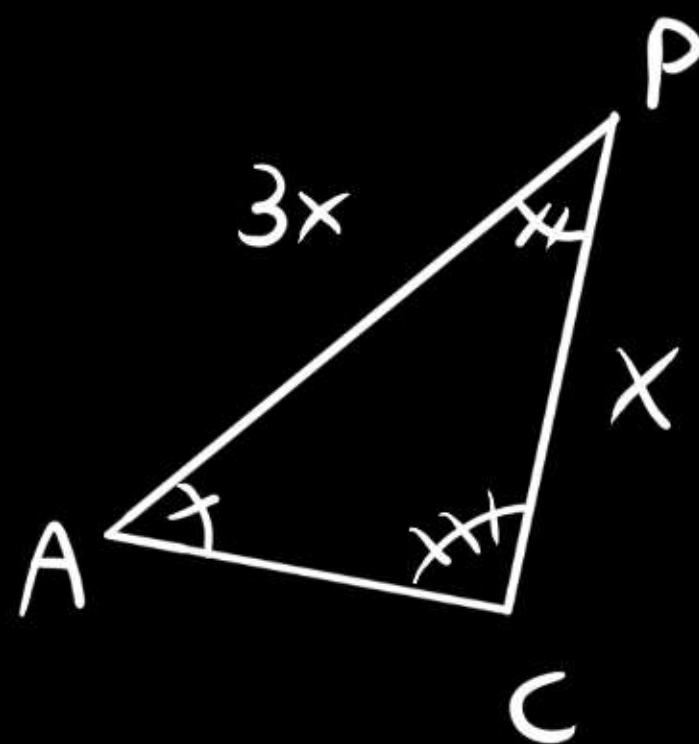
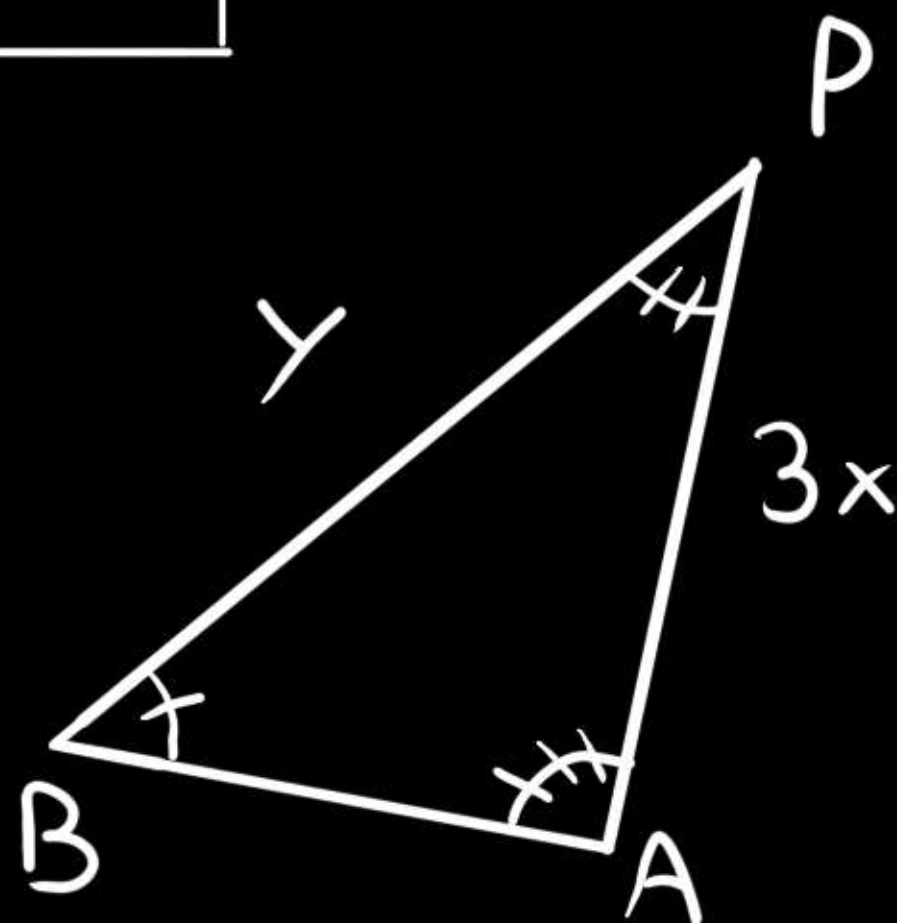
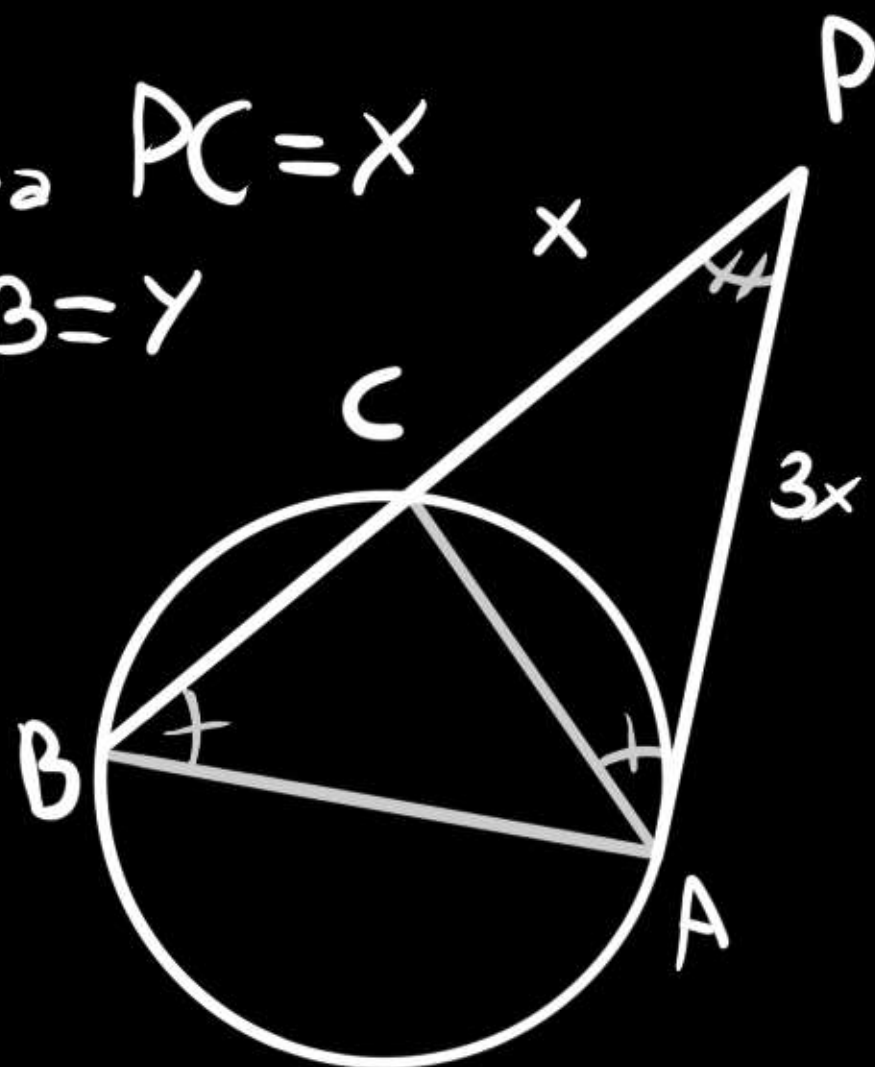


2. De acordo com a Figura abaixo, quanto mede PB?



Seguindo as mesmas relações que o exercício 1, podemos chegar a resposta.

Para  $PC = x$   
e  $PB = y$



$$\frac{3x}{x} = \frac{y}{3x}$$

↓

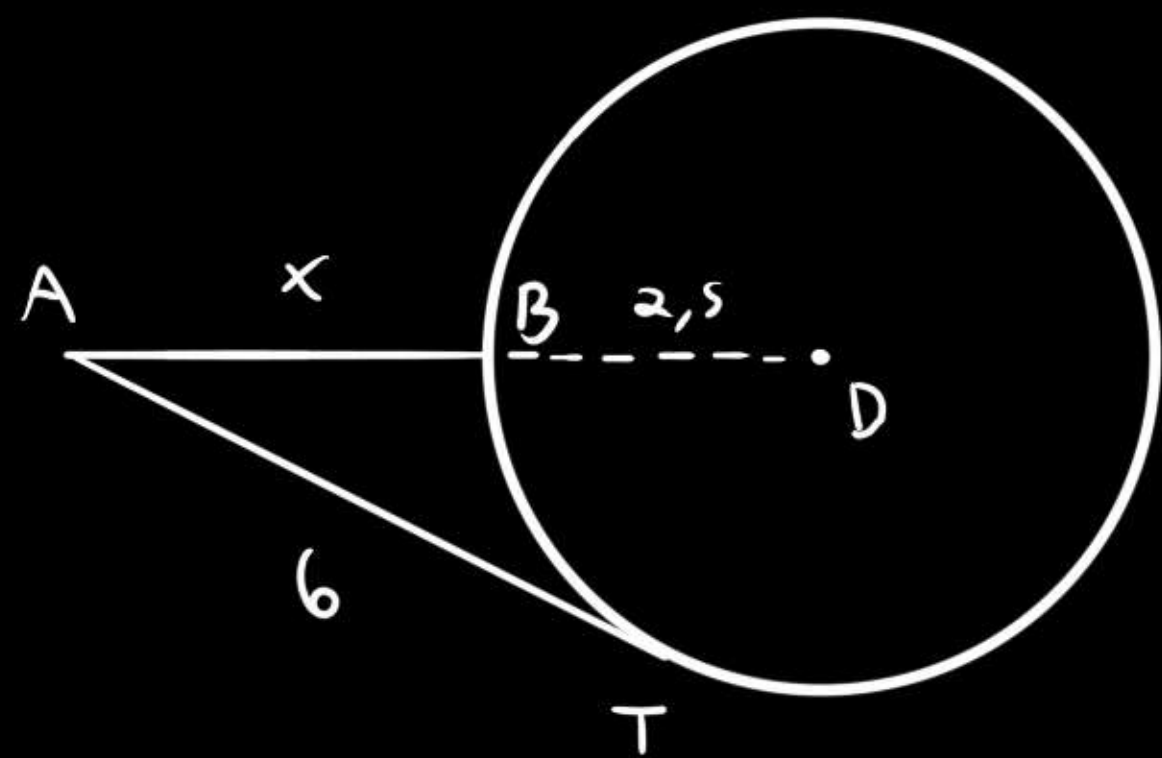
$$3 \cdot 3x = y$$

$$y = 9x$$

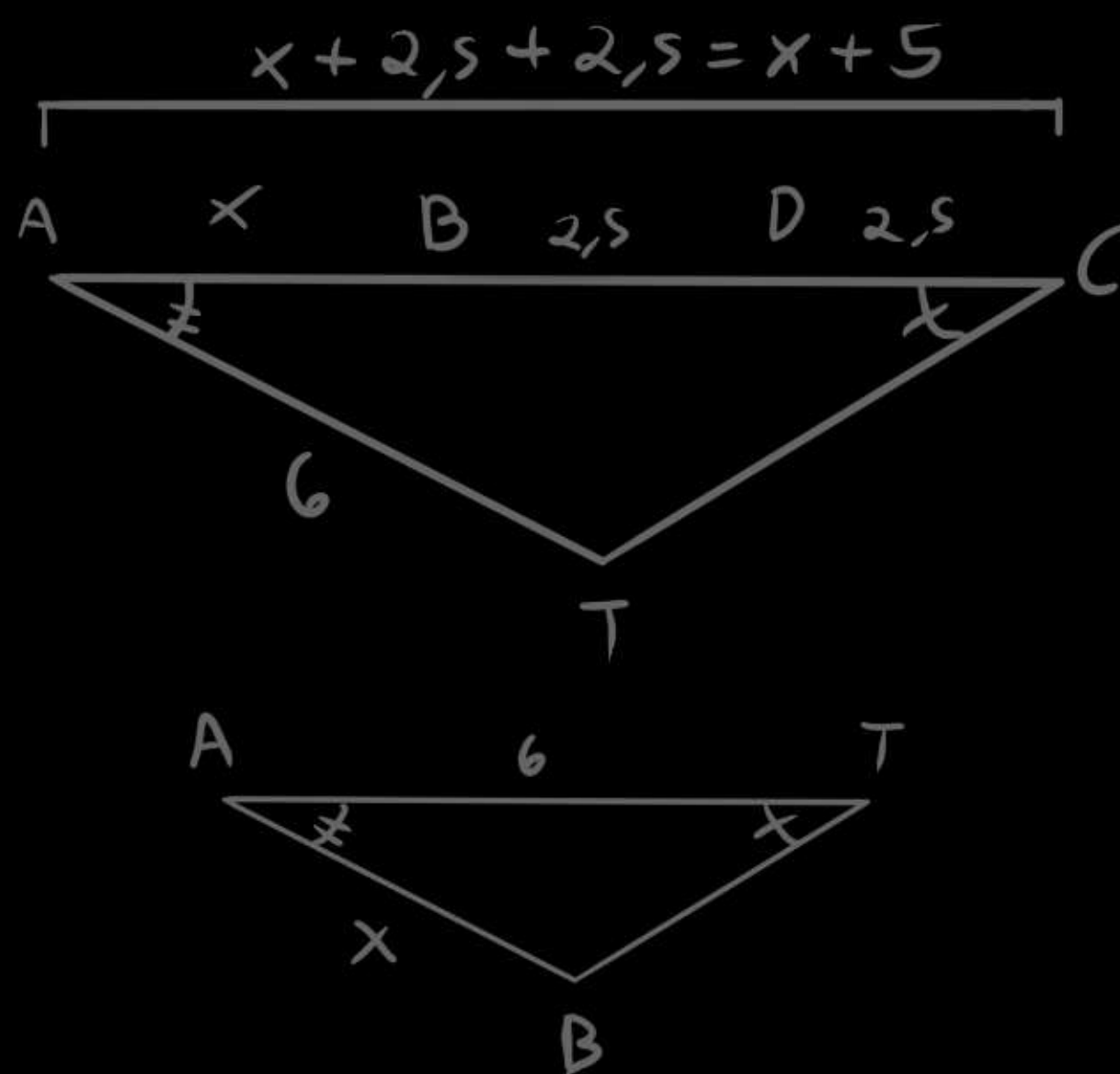
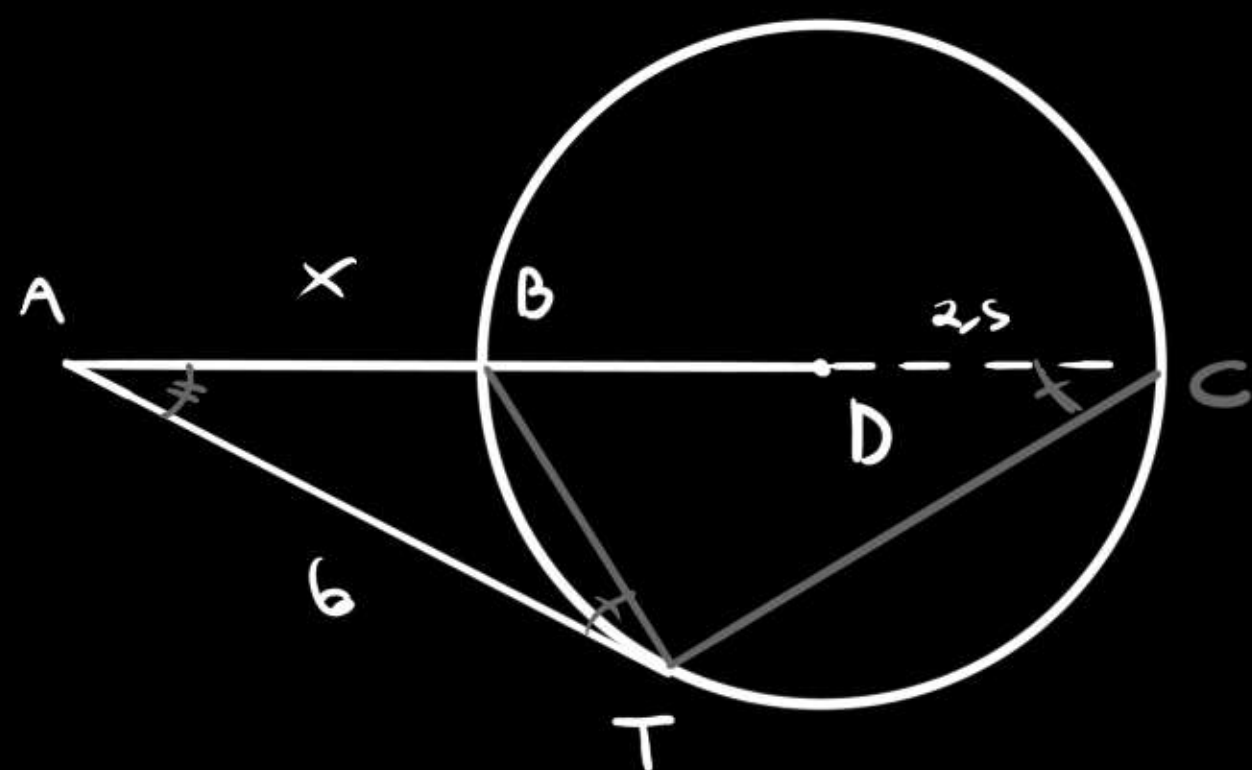
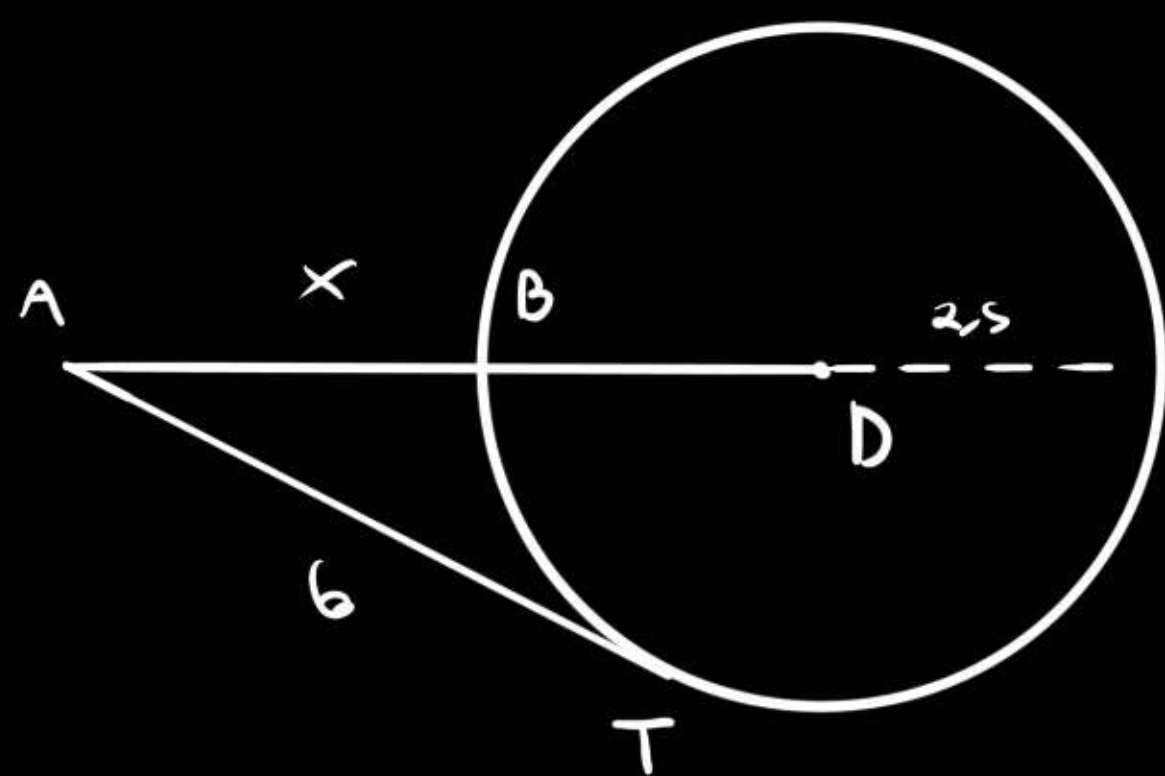
ou

$$PB = 9PC \quad \text{(B)}$$

3. Quanto vale  $x$ ?



I. Com os dados do exercício, podemos criar uma situação semelhante aos exercícios anteriores:



$$\frac{x+5}{6} = \frac{6}{x}$$

$$x^2 + 5x = 36$$

$$x^2 + 5x - 36 = 0$$

$$A=1 \quad B=5 \quad C=-36$$

$$\Delta = 5^2 - 4 \cdot (-36)$$

$$169 \quad 4$$

$$\frac{-5 \pm 13}{2 \cdot 1} = 4 \text{ ou } -9$$

$$x = 4 \text{ (E)}$$

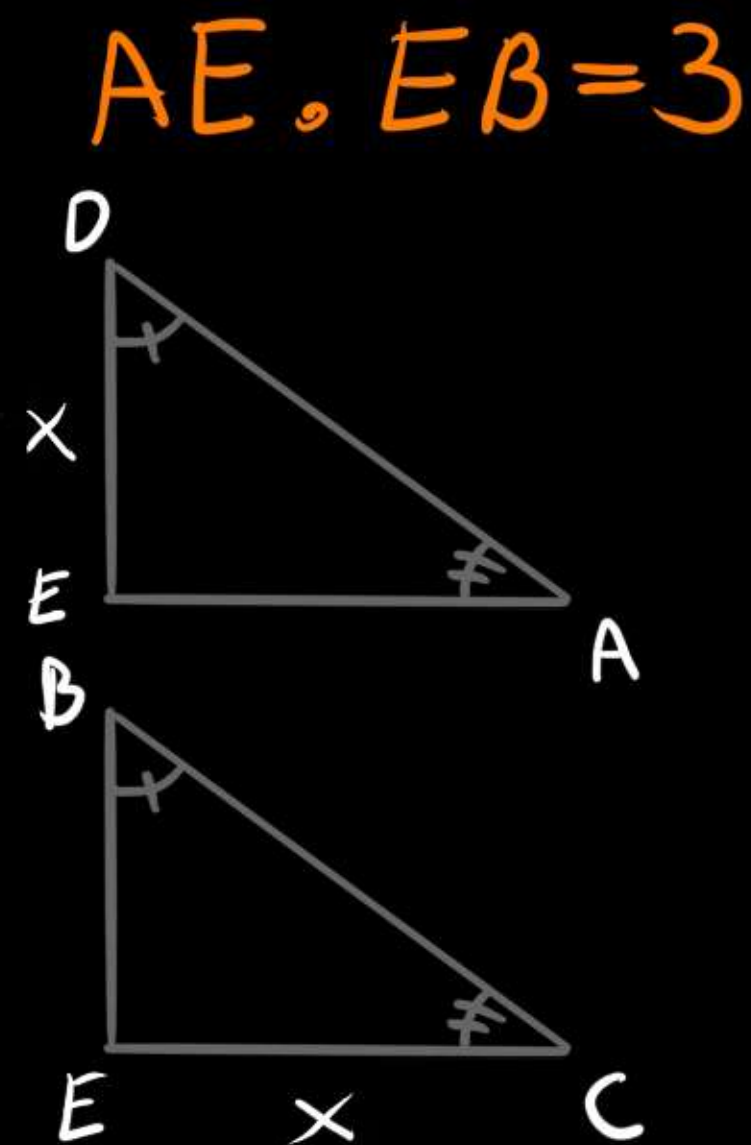
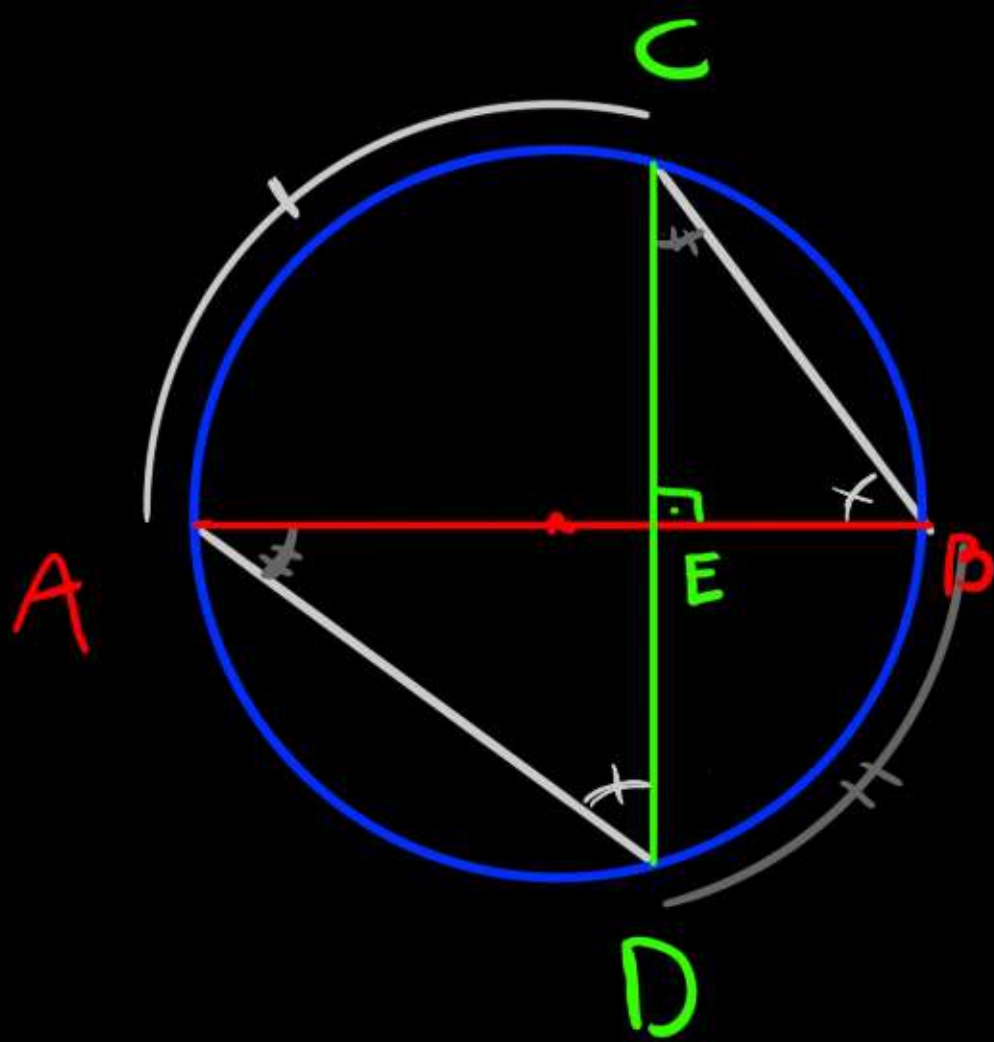
II. Agora é só repetir o raciocínio dos outros exercícios.



4.

Num círculo, a corda CD é perpendicular  
ao diâmetro AB no ponto E. Se  $AE \cdot EB = 3$ ,  
então quanto mede CD?

I.a partir da leitura do texto, podemos desenhar  
a seguinte figura.



$$\frac{AE}{CE} = \frac{DE}{BE}$$

$$3 = DE \cdot CE$$

Como AB é o diâmetro  
e o ponto E está nesse  
segmento, então  $CE = DE$

$$CE^2 = 3$$

$$CE = \sqrt{3} \text{ logo}$$

$$CE + DE = CD$$

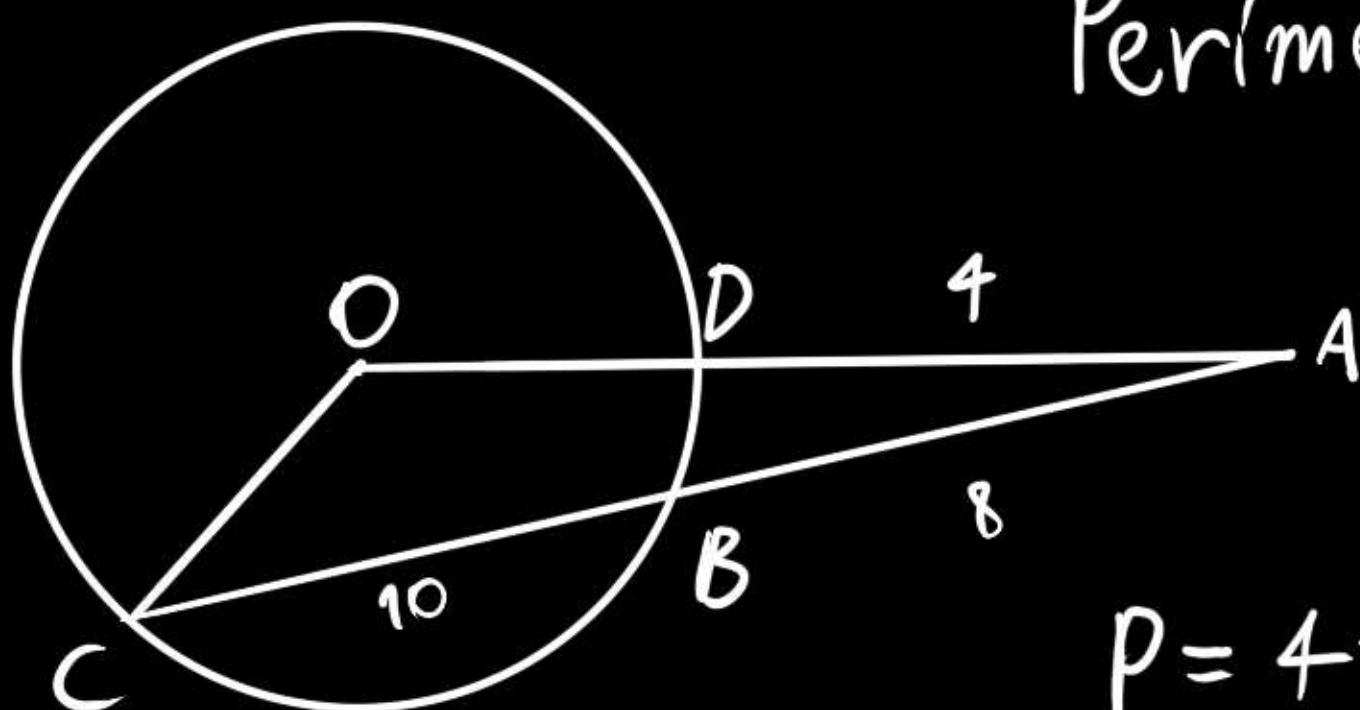
$$CE + CE = CD$$

$$\boxed{\sqrt{3} + \sqrt{3} = 2\sqrt{3} \text{ (B)}}$$



5. Qual o perímetro?

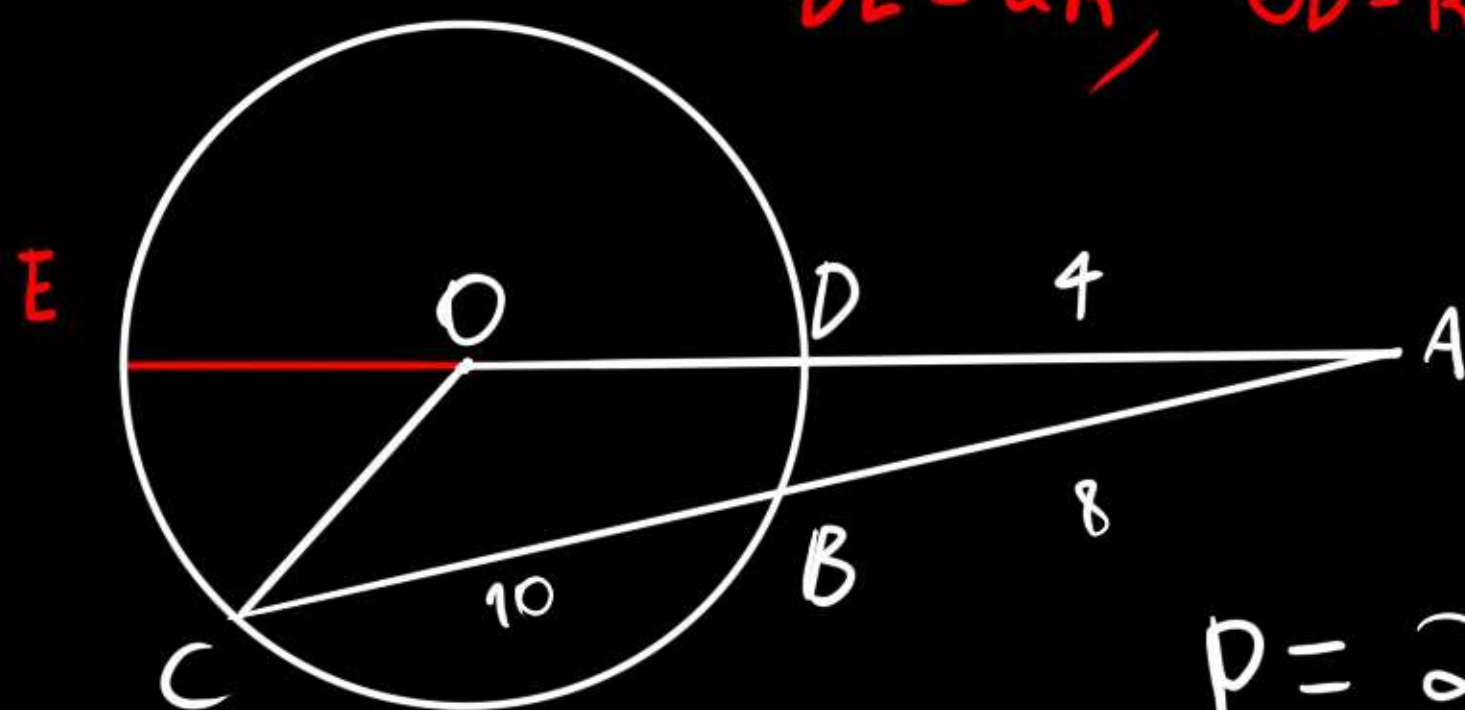
Perímetro =  $p$



$$p = 4 + 8 + 10 + OD + OC$$

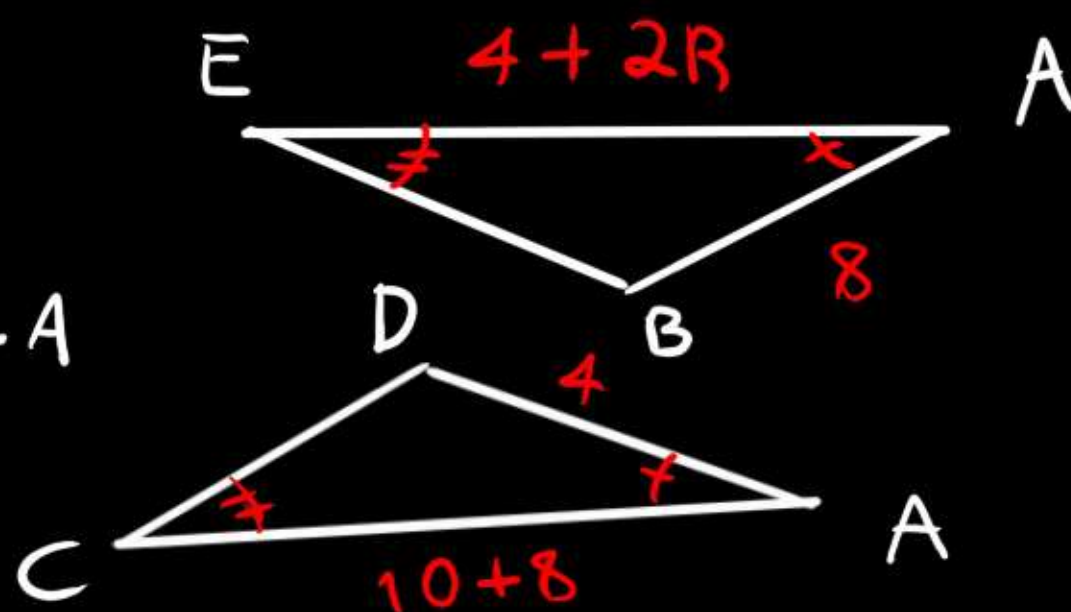
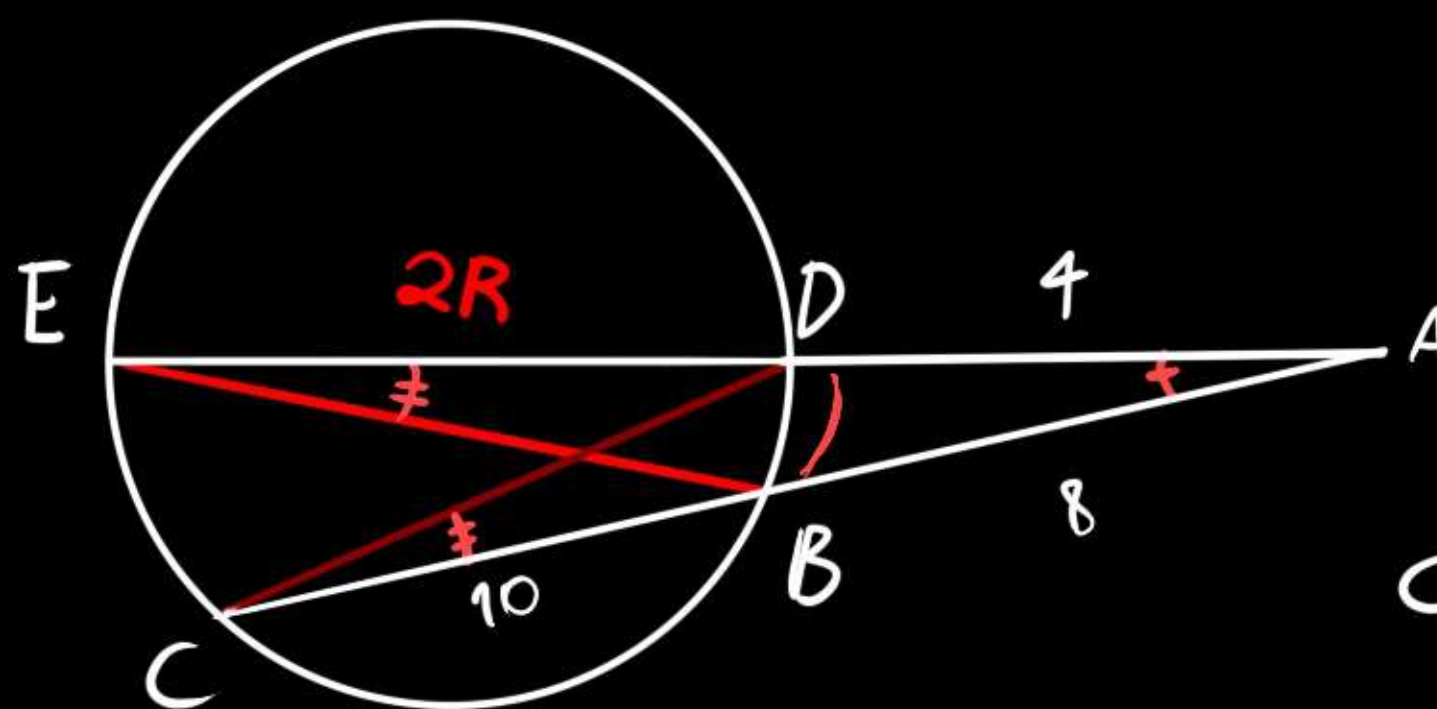
I. a distância entre OD e OC é o raio, portanto  $OD \sim OC$ .

$$DE = 2R, \quad OD = R = OC$$



$$p = 22 + R + R \Leftrightarrow p = 22 + 2R$$

II



$$\frac{4 + 2R}{10 + 8} = \frac{8}{4} \Leftrightarrow 2R = 32 \text{ e } p = 22 + 2R$$

$$p = 22 + 32$$

$$p = 54 \text{ (E)}$$