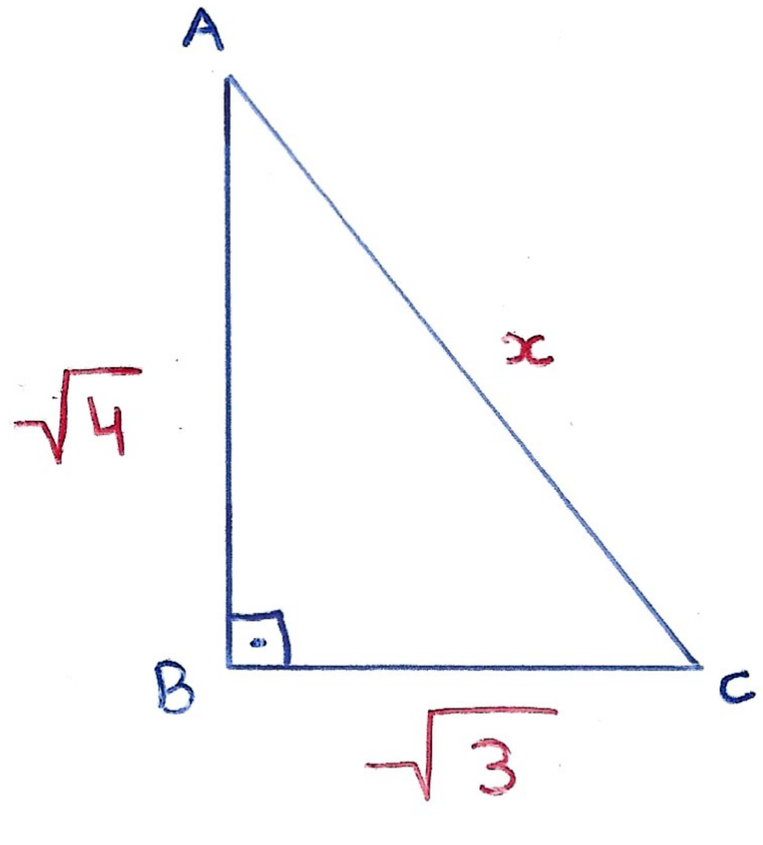
①



TEOREMA DE PITÁGORAS

$$(\sqrt{4})^2 + (\sqrt{3})^2 = x^2$$

$$x^2 = 4 + 3$$

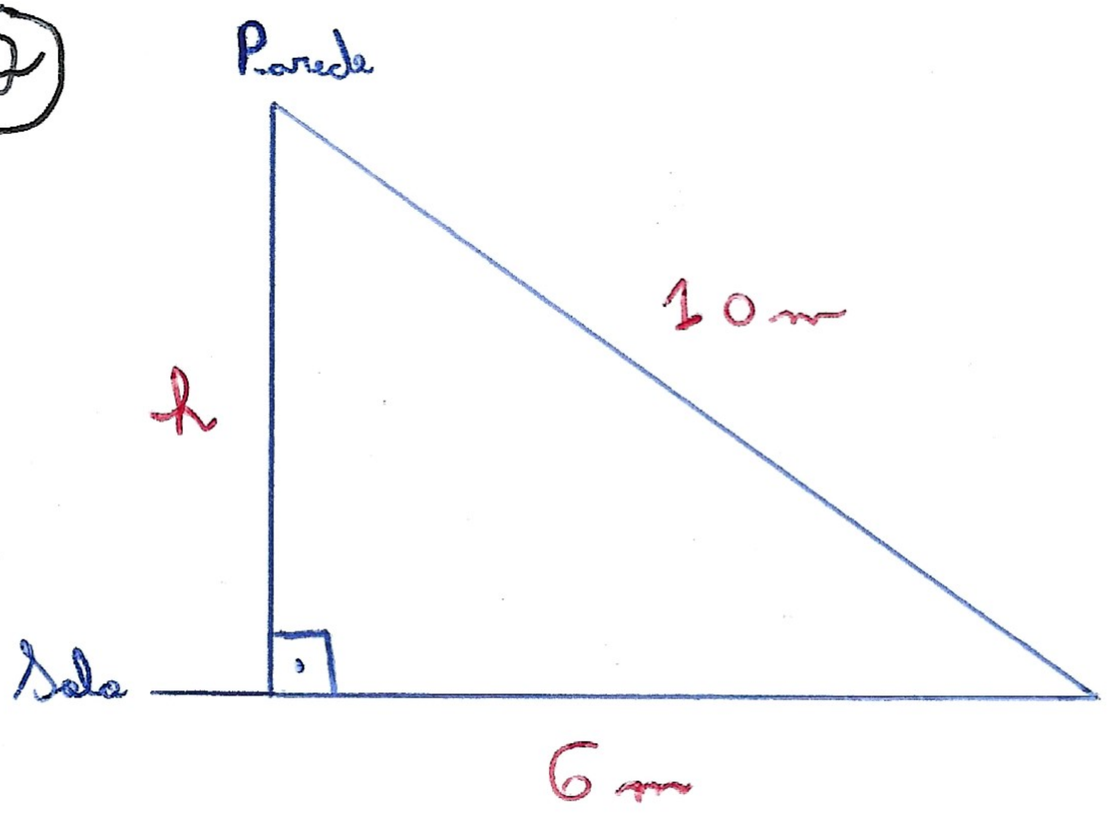
$$x^2 = 7$$

$$x = \sqrt{7}$$

R: B) $\sqrt{7}$

---

②



TEOREMA DE PITÁGORAS

$$x^2 + 6^2\,m = 10^2\,m$$

$$x^2 + 36\,m = 100\,m$$

$$x^2 = 100\,m - 36\,m$$

$$x^2 = 64\,m$$

$$x = \sqrt{64}\,m$$

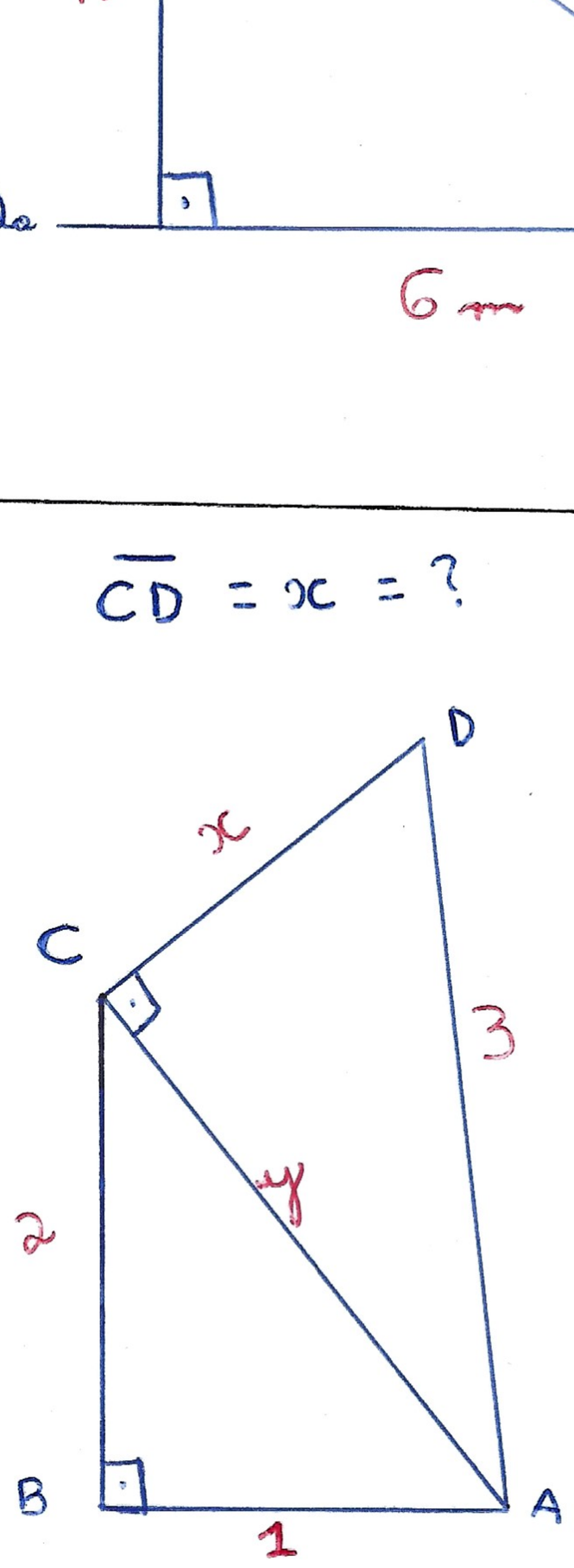
$$x = 8\,m$$

R: 8 m

---

③

$\overline{CD} = x = ?$



$$2^2 + 1^2 = y^2$$

$$4 + 1 = y^2$$

$$5 = y^2$$

$$y = \sqrt{5}$$

TEOREMA DE PITÁGORAS

$$x^2 + y^2 = 3^2$$

$$x^2 + (\sqrt{5})^2 = 3^2$$

$$x^2 + 5 = 9$$

$$x^2 = 9 - 5$$

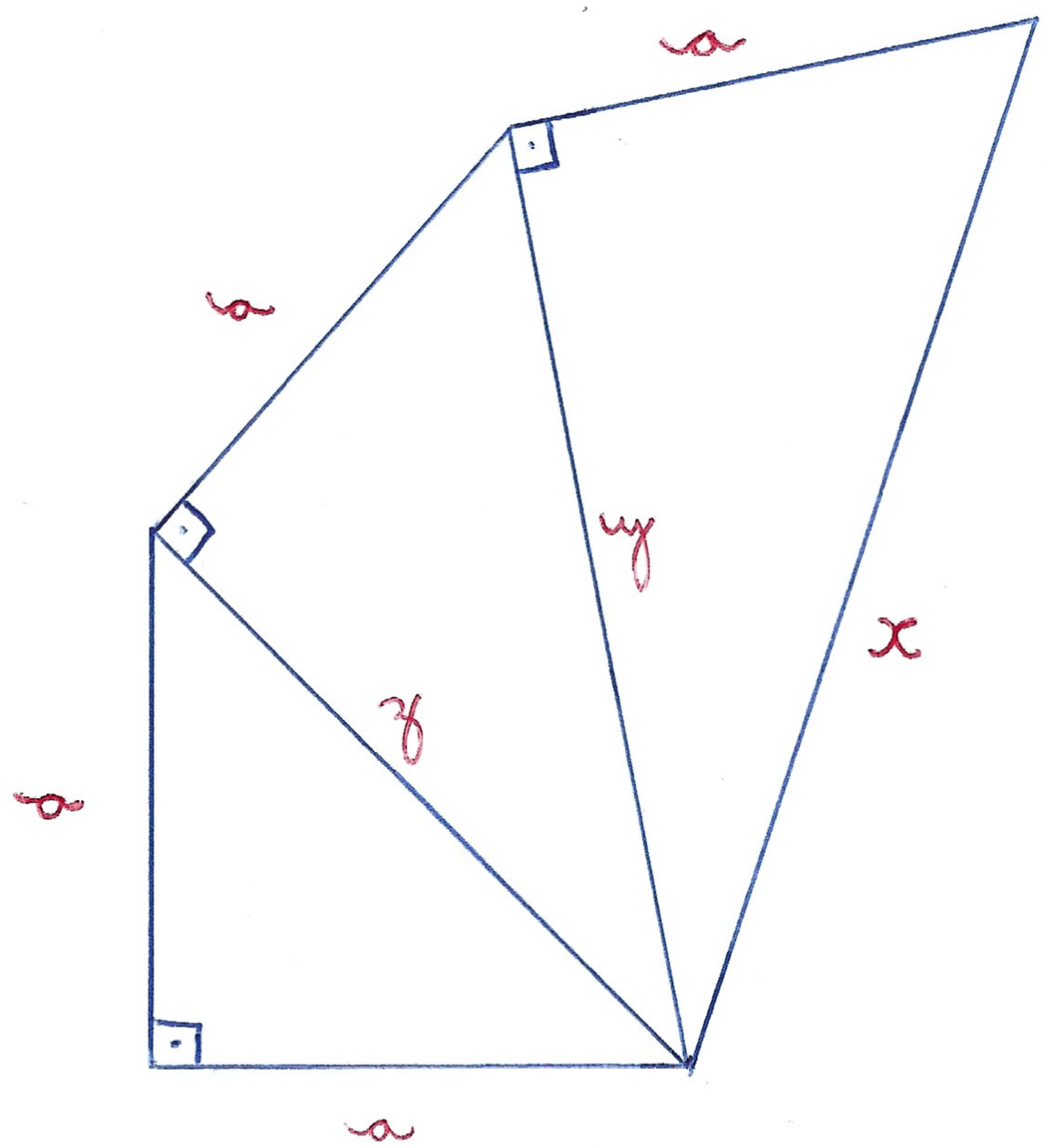
$$x^2 = 4$$

$$x = \sqrt{4}$$

$$x = 2$$

R: B) 2

4



TEOREMA DE PITÁGORAS

$a^2 + a^2 = z^2$

$z^2 = 2a^2$

$z^2 + a^2 = y^2$

$2a^2 + a^2 = y^2$

$y^2 = 3a^2$

$x^2 = a^2 + y^2$

$x^2 = a^2 + 3a^2$

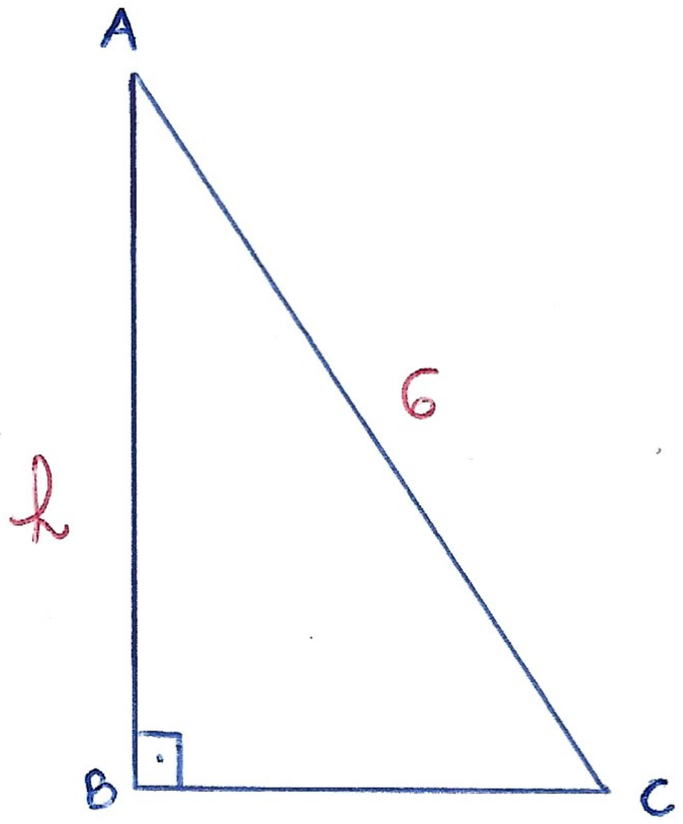
$x^2 = 4a^2$

$x = \sqrt{4a^2}$

$x = 2a$

R: B) $2a$

(5)



TEOREMA DE PITÁGORAS

$$\ell^2 + 2^2 = 6^2$$

$$\ell^2 + 4 = 36$$

$$\ell^2 = 36 - 4$$

$$\ell^2 = 32$$

$$\ell = \sqrt{32} = 4\sqrt{2}$$

$\sqrt{32}$ 2

32	2
16	2
8	2
4	2
2	2
1	

$\rightarrow 2 \cdot 2\sqrt{2} = 4\sqrt{2}$

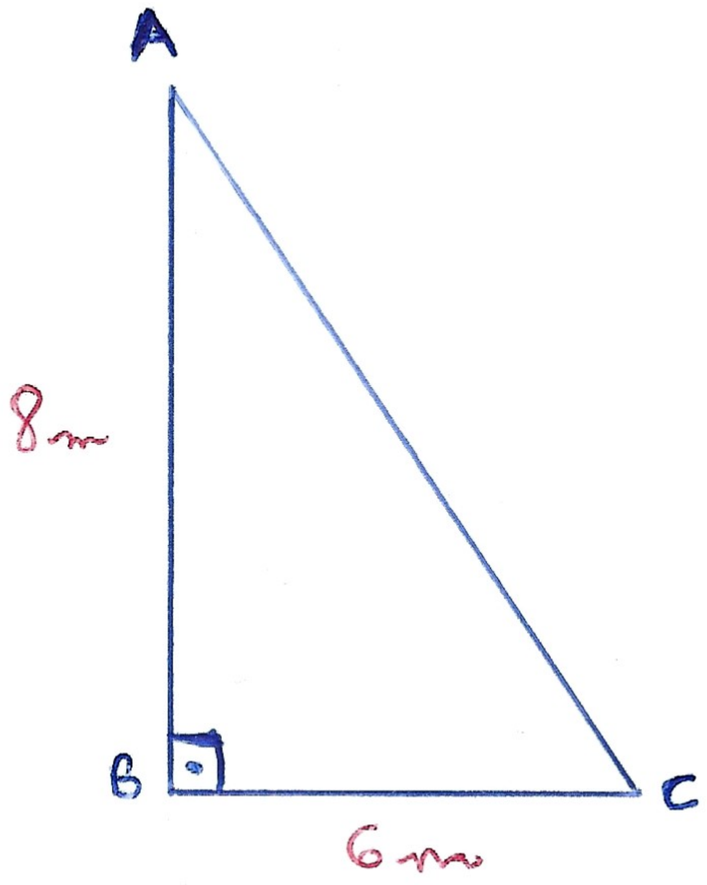
ÁREA DO TRIÂNGULO $= A_T = \dfrac{\ell \cdot \ell}{2}$

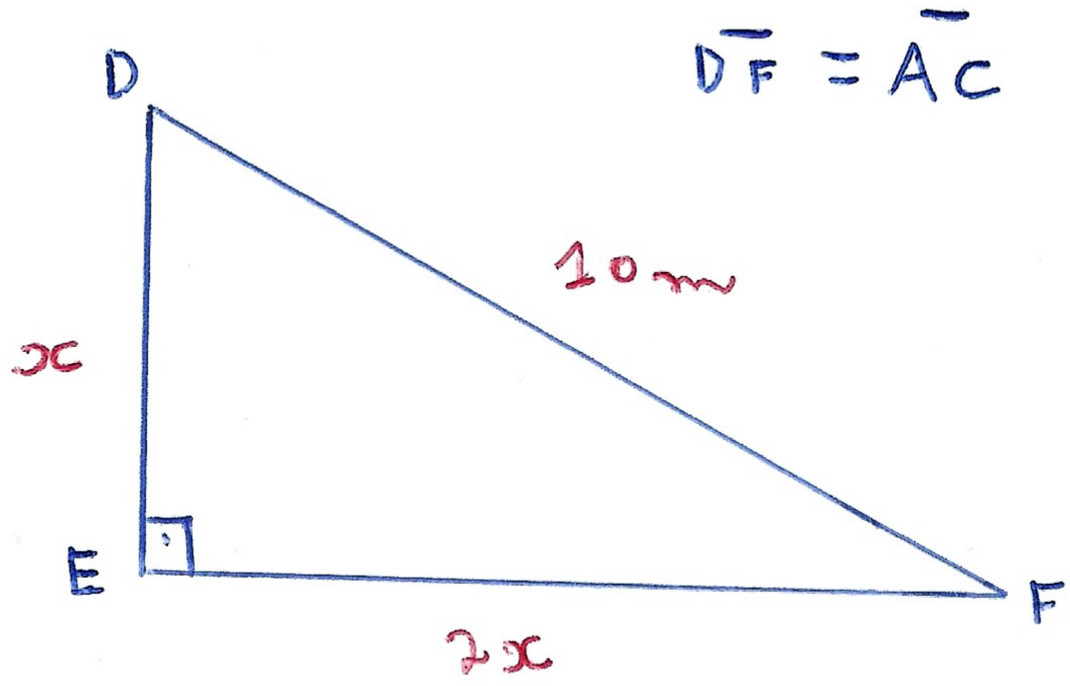
$$A_T = \frac{2 \cdot 4\sqrt{2}}{2}$$

$$A_T = 4\sqrt{2}$$

R: C) $4\sqrt{7}$

(6)





$\overline{DF} = \overline{AC}$

CONSIDERANDO O TRIÂNGULO PITAGÓRICO (3, 4 e 5), temos:

$\overline{AB} = 8\text{m}$ (2·4)

$\overline{BC} = 6\text{m}$ (2·3)

$\overline{AC} = 10\text{m}$ (2·5)

20	2
10	2
5	5
1	

$2\sqrt{5}$

$$(2x)^2 + x^2 = 10^2$$

$$4x^2 + x^2 = 100$$

$$5x^2 = 100$$

$$x^2 = \frac{100}{5}$$

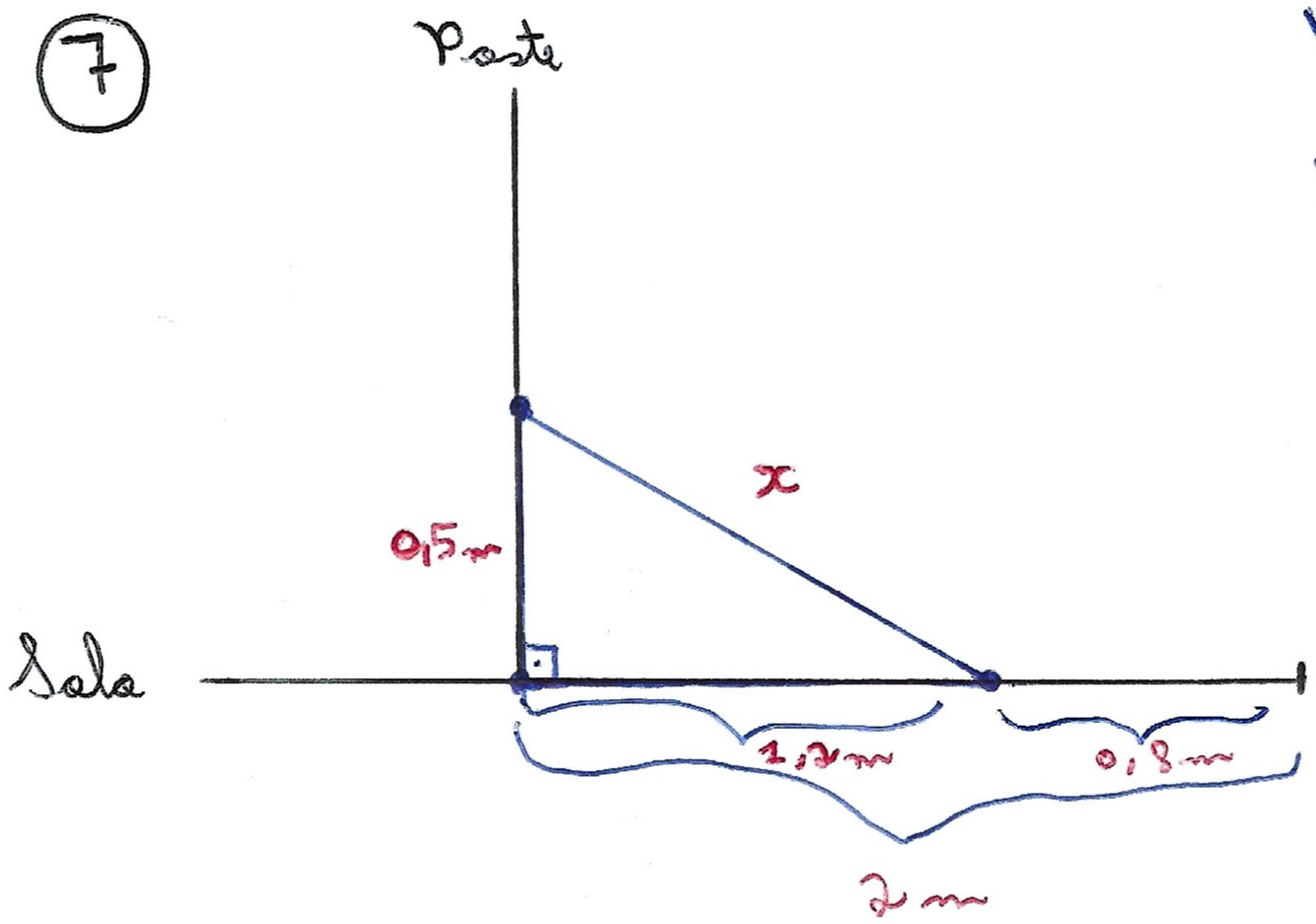
$$x^2 = 20$$

$$x = \sqrt{20}$$

$$x = 2\sqrt{5}$$

R: A) $2\sqrt{5}$

(7)



$V_F = 10\,cm/s$

$V_A = 16\,cm/s$

$F = 5.10\,cm = 50\,cm$

$\rightarrow$ $A = 5.16\,cm = 80\,cm$

$50\,cm = 0,5\,m$

$80\,cm = 0,8\,m$

$2\,m - 0,8\,m = 1,2\,m$

$\rightarrow$ TEOREMA DE PITÁGORAS

$(0,5\,m)^2 + (1,2\,m)^2 = x^2$

$0,25\,m + 1,44\,m = x^2$

$x^2 = 1,69\,m$

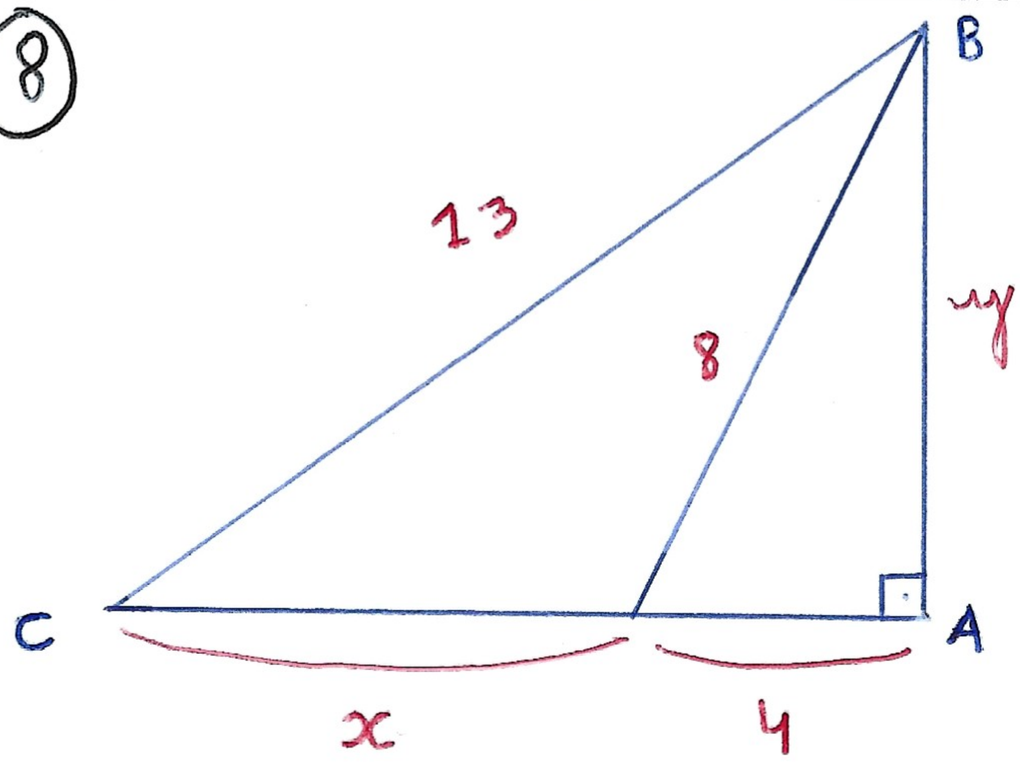
$x = \sqrt{1,69}\,m$

$x = 1,3\,m$

R: B) 1,3 m

---

(8)



TEOREMA DE PITÁGORAS

$y^2 + 4^2 = 8^2$

$y^2 + 16 = 64$

$y^2 = 64 - 16$

$y^2 = 48$

$y = -\sqrt{48} = 2 \cdot 2\sqrt{3} = 4\sqrt{3}$

48	2
24	2
12	2
6	2
3	3
1	

$(4\sqrt{3})^2 + (4+x)^2 = 13^2$

$48 + 4^2 + 2 \cdot 4x + x^2 = 169$

$48 + 16 + 8x + x^2 = 169$

$64 + 8x + x^2 = 169$

$64 + 8x + x^2 - 169 = 0$

$x^2 + 8x - 105 = 0$

$a = 1$

$b = 8$

$c = -105$

$\rightarrow$ SOMA E PRODUTO

$7 + (-15) = -8$

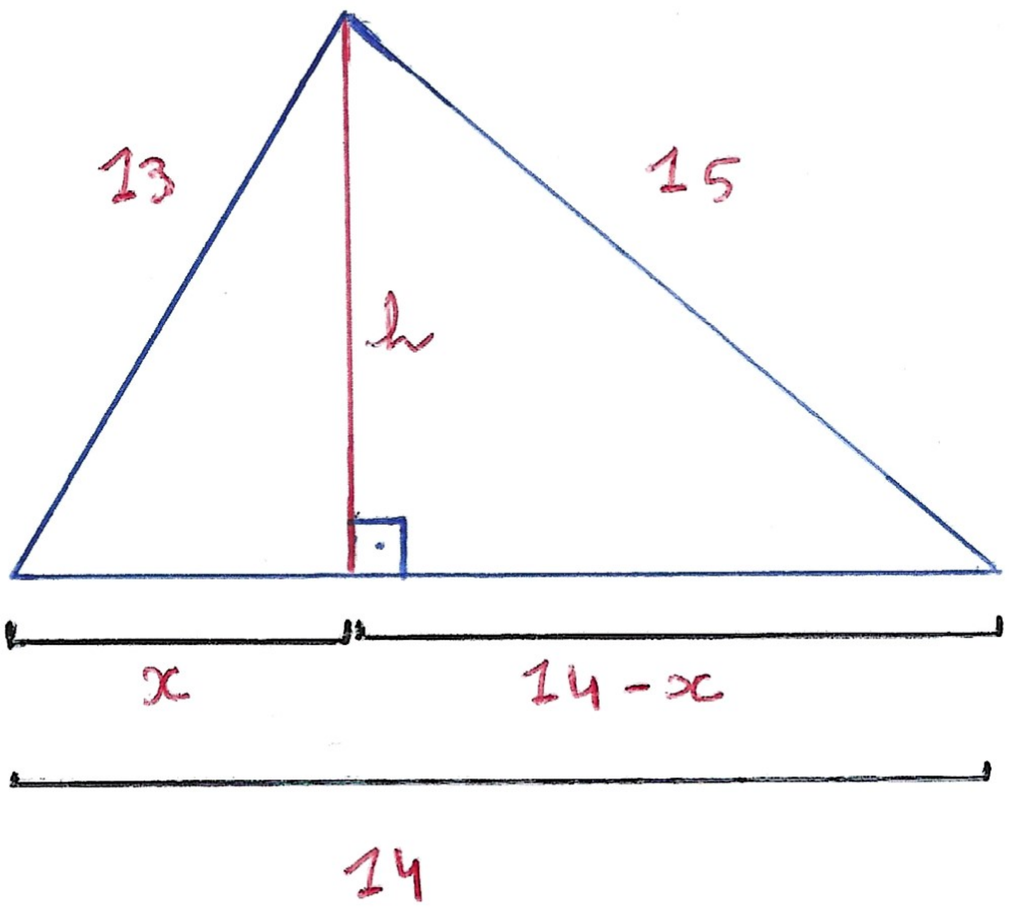
$7 \times (-15) = -105$

Dado que nessa variável x não pode ser negativo, nesse contexto, temos:

$x = 7$

R: D) 7 m

9



COM O TEOREMA DE PITÁGORAS:

$h^2 + x^2 = 13^2$

$h^2 = 13^2 - x^2$

$h^2 + (14-x)^2 = 15^2$

$h^2 = 15^2 - (14-x)^2$

$15^2 - (14-x)^2 = 13^2 - x^2$

$15^2 - 14^2 + 2 \cdot 14x - x^2 = 13^2 - x^2$

$15^2 - 14^2 + 28x - x^2 = 13^2 - x^2$

$15^2 - 14^2 + 28x - x^2 = 13^2 - x^2$

$28x - x^2 + x^2 = 13^2 + 14^2 - 15^2$

$28x = 169 + 196 - 225$

$28x = 140$

$x = \frac{140}{28}$

$x = 5$

$h^2 + x^2 = 13^2$

$h^2 + 5^2 = 13^2$

$h^2 = 13^2 - 5^2$

$h^2 = 169 - 25$

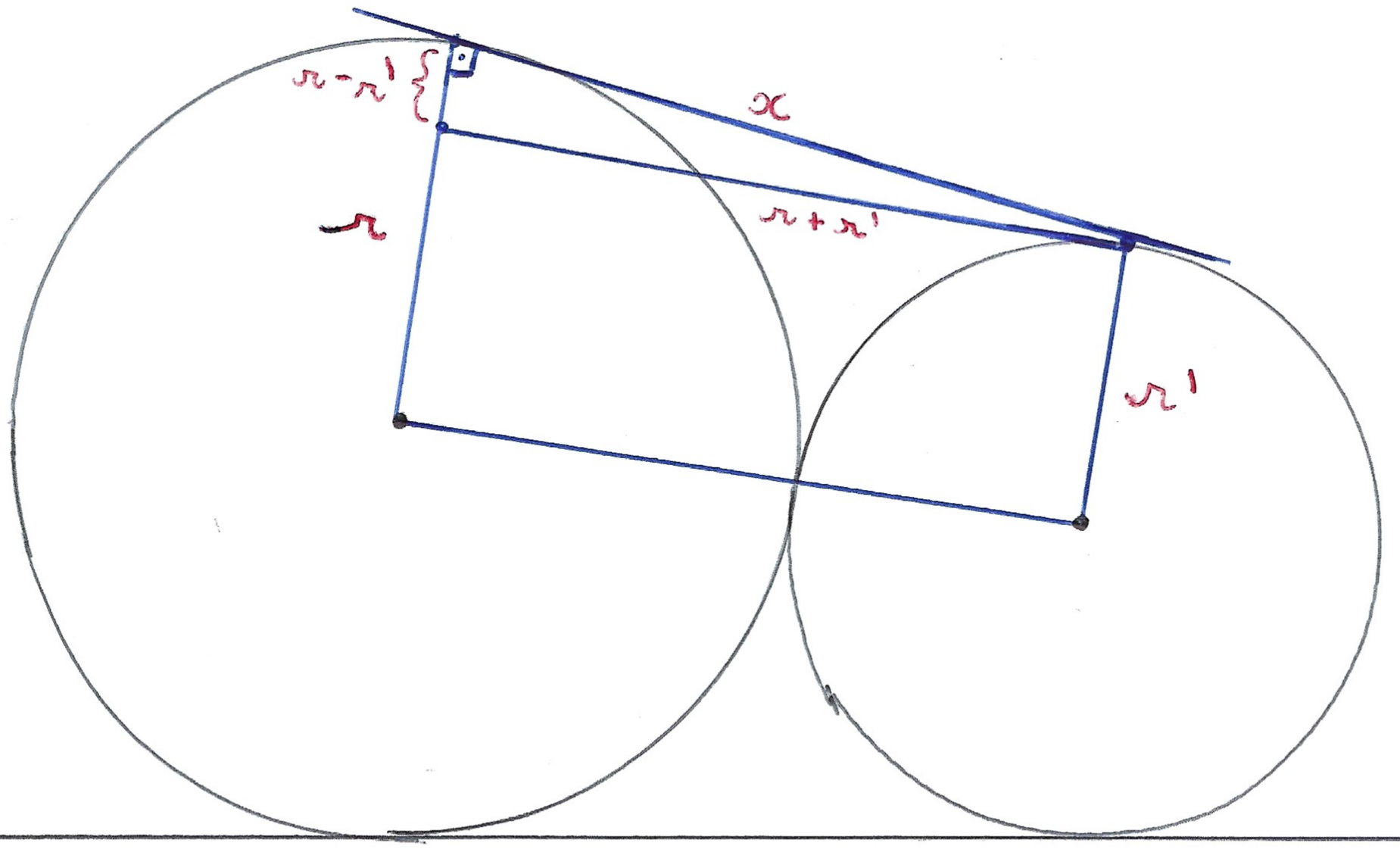
$h^2 = 144$

$h = \sqrt{144}$

$h = 12$

R: 12

10



TEOREMA DE PITÁGORAS

$$(r - r')^2 + x^2 = r + r'$$

$$r^2 - 2r \cdot r' + r'^2 + x^2 = r^2 + 2r \cdot r' + r'^2$$

$$x^2 = r^2 - r^2 + 2r \cdot r' + 2r \cdot r' + r'^2 - r'^2$$

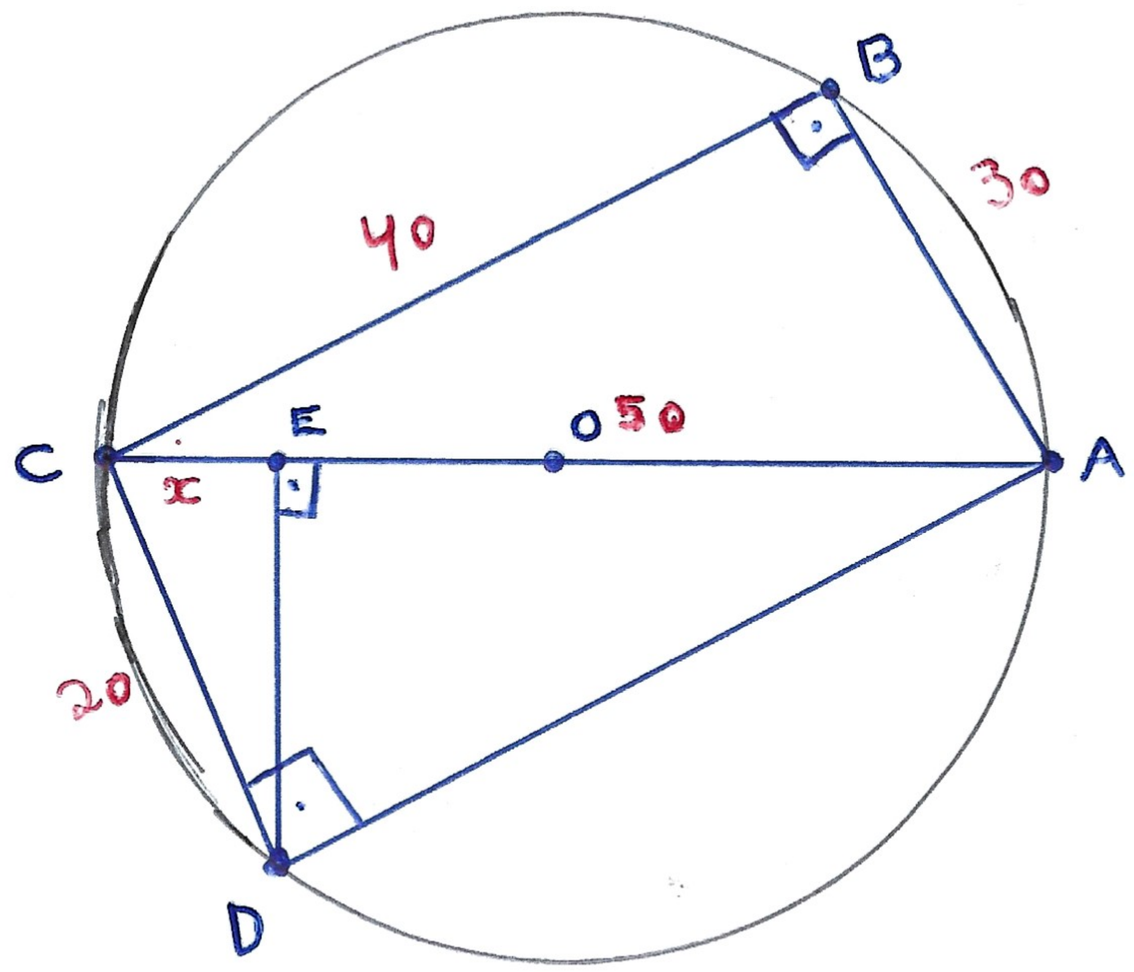
$$x^2 = 4r \cdot r'$$

$$x = \sqrt{4r \cdot r'}$$

$$x = 2\sqrt{r \cdot r'}$$

R: $2\sqrt{r \cdot r'}$

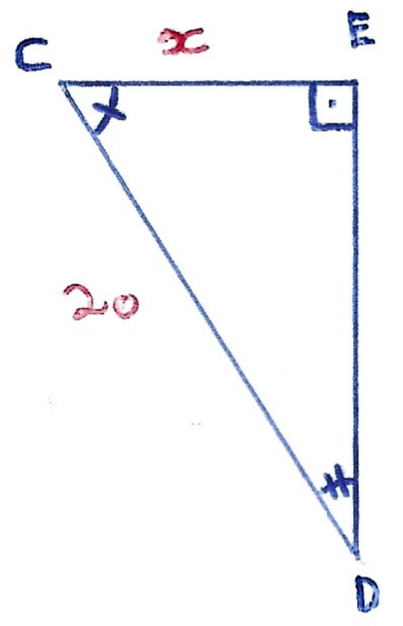
11



DADO O TRIÂNGULO PITAGÓRICO (3, 4 e 5), temos:

$\overline{BA} = 30 \quad (3 \cdot 10)$
$\overline{CB} = 40 \quad (4 \cdot 10)$
$\overline{CA} = 50 \quad (5 \cdot 10)$

SABENDO QUE TODO TRIÂNGULO ESCRITO EM UMA SEMICIRCUNFERÊNCIA É UM TRIÂNGULO RETÂNGULO, TEMOS QUE $\triangle CBA$ e $\triangle CDA$ SÃO RETÂNGULOS



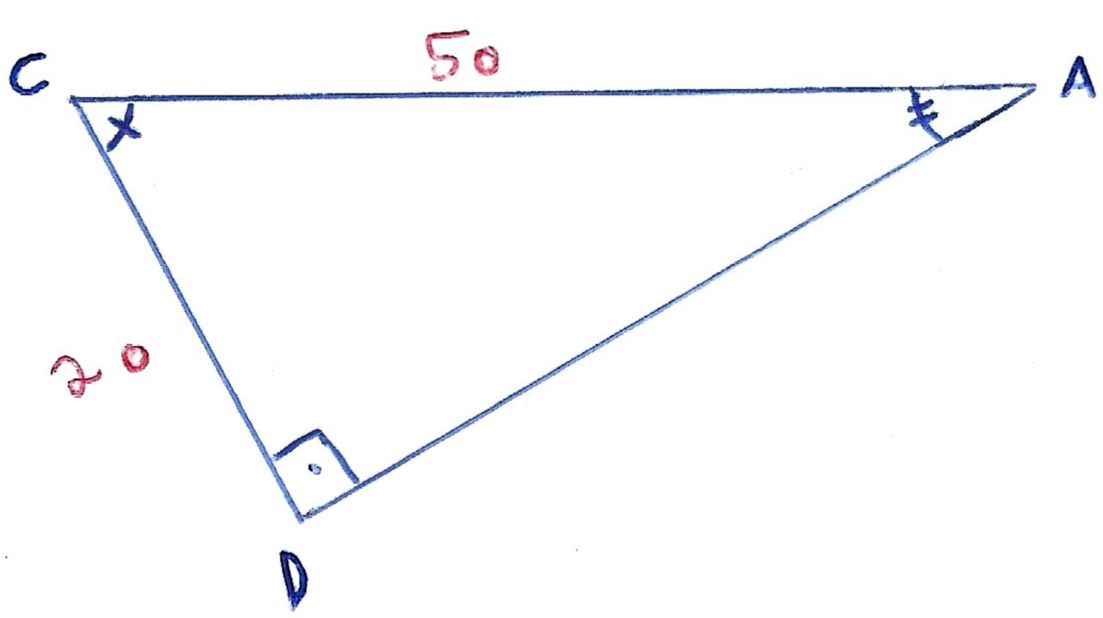
PELO CRITÉRIO
$\sim AA$

$\triangle CED \sim \triangle CDA$

$\rightarrow \frac{50}{20} = \frac{20}{x}$

$50x = 400$

$x = \frac{400}{50}$



$x = 8$

R: C) 8