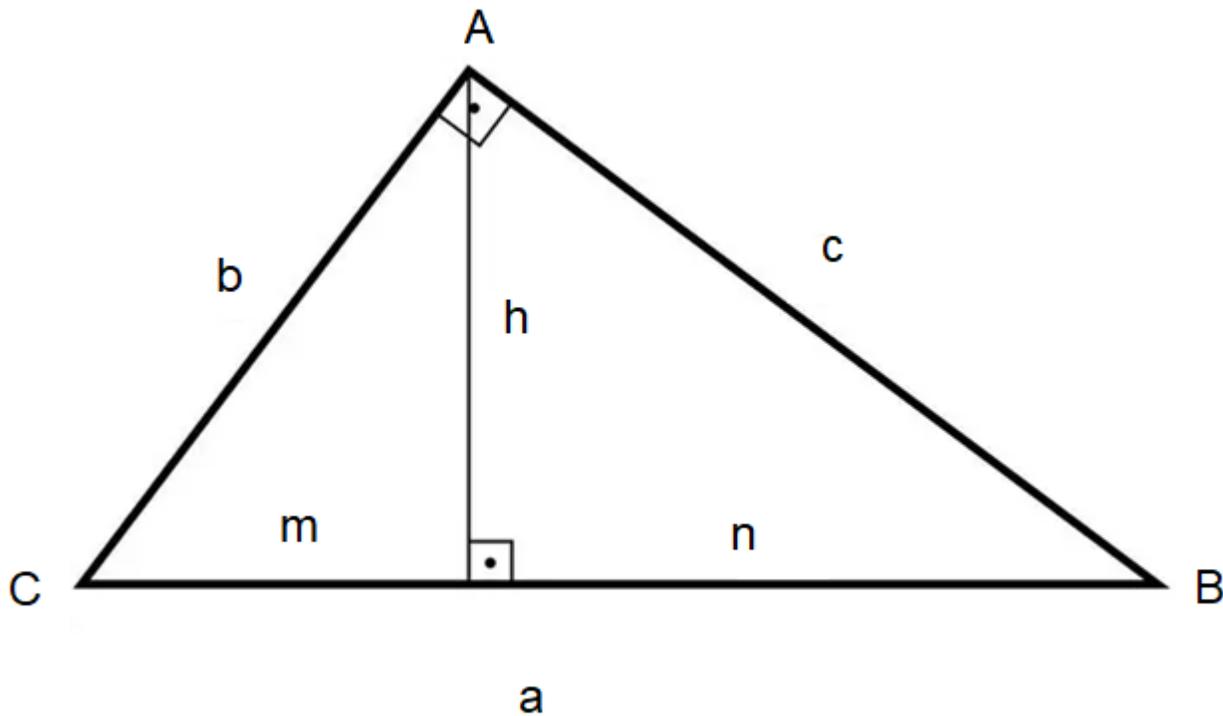


PROFESSOR JAIRO

COLÉGIO APLICATIVO
Sistema poliedro de Ensino



Relações métricas
no triângulo
retângulo



a: hipotenusa;

b: cateto;

c: cateto;

m: projeção do cateto b sobre a hipotenusa;

n: projeção do cateto c sobre a hipotenusa;

h: altura relativa à hipotenusa.

$$b^2 = m \cdot a$$

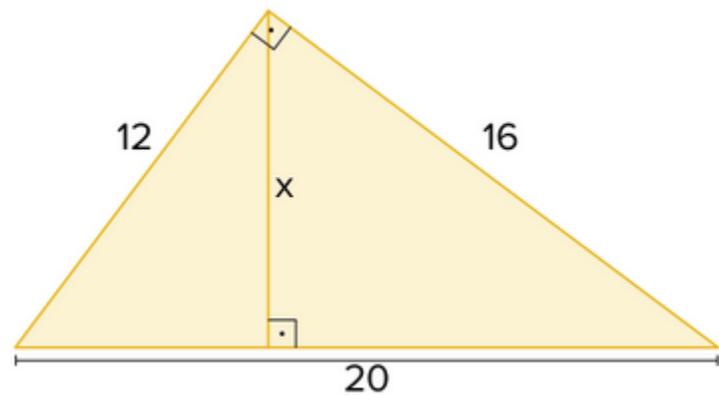
$$c^2 = n \cdot a$$

$$h^2 = m \cdot n$$

$$b \cdot c = a \cdot h$$

$$a^2 = b^2 + c^2$$

a)

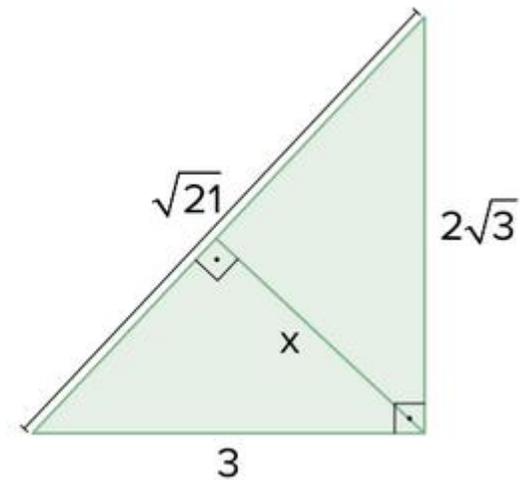


Da relação métrica $a \cdot h = b \cdot c$, temos:

$$20x = 12 \cdot 16$$

$$x = \frac{192}{20} = 9,6 \text{ cm}$$

b)

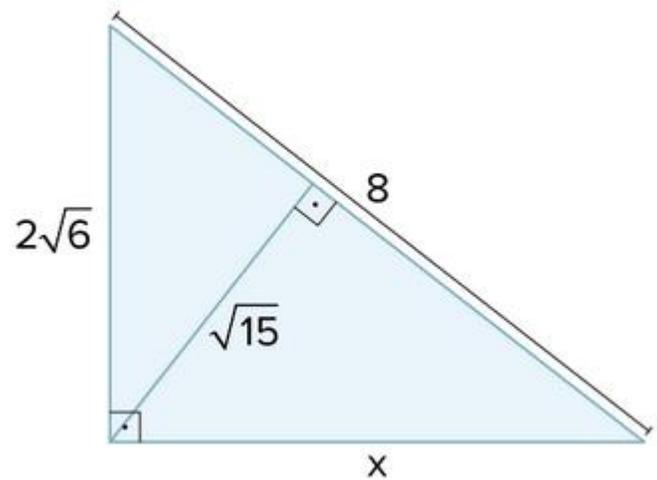


Da relação métrica $a \cdot h = b \cdot c$, temos:

$$x \cdot \sqrt{21} = 2\sqrt{3} \cdot 3$$

$$x = \frac{6\sqrt{3}}{\sqrt{21}} = \frac{6\sqrt{7}}{7} \text{ cm}$$

c)



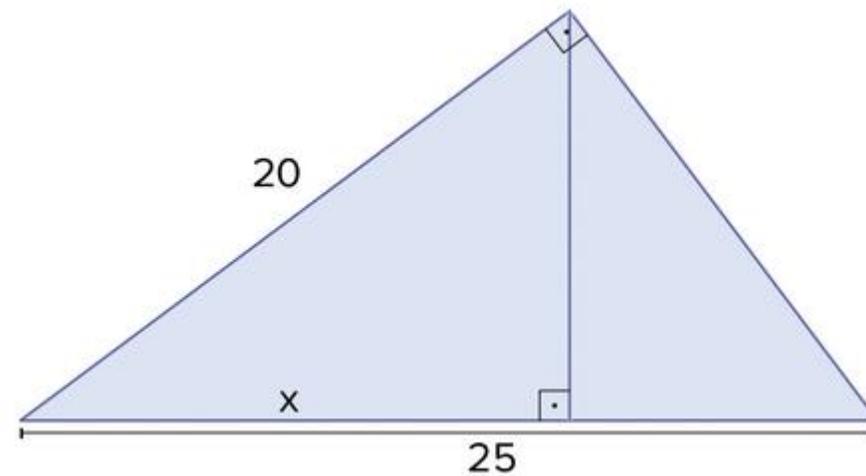
Da relação métrica $a \cdot h = b \cdot c$, temos:

$$8 \cdot \sqrt{15} = 2\sqrt{6} \cdot x$$

$$x = \frac{8\sqrt{15}}{2\sqrt{6}} = 2\sqrt{10} \text{ cm}$$

$$\begin{aligned} \frac{8\sqrt{15}}{2\sqrt{6}} &= 4 \sqrt{\frac{15}{6}} \\ &= 4 \sqrt{\frac{5}{2}} = 4 \frac{\sqrt{5}}{\sqrt{2}} \frac{\sqrt{2}}{\sqrt{2}} \\ &= \frac{4\sqrt{10}}{2} \\ &= 2\sqrt{10} \end{aligned}$$

d)



Da relação métrica $c^2 = a \cdot m$, temos:

$$20^2 = x \cdot 25$$

$$x = \frac{400}{25} = 16 \text{ cm}$$