NOME: LARYSSA GOMES BENTO.
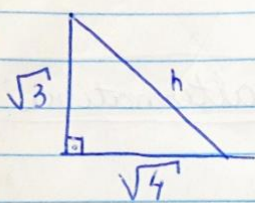
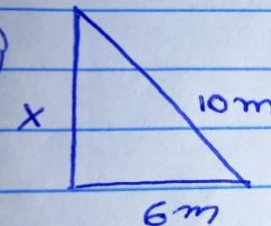**CTII350.**

TRIÂNGULOS RETÂNGULOS – TAREFA BÁSICA.
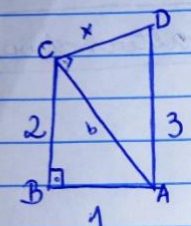
01

$$h^2 = (\sqrt{3})^2 + (\sqrt{4})^2$$
$$h^2 = 3 + 4$$
$$\boxed{h = \sqrt{7}}$$ $$\boxed{\text{alternativa "B"}}$$
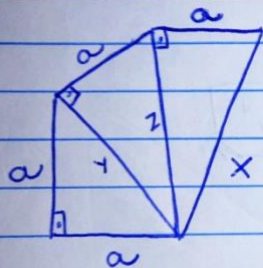
02

$$10^2 = 6^2 + x^2$$
$$100 = 36 + x^2$$
$$100 - 36 = x^2$$
$$64 = x^2$$
$$x = \sqrt{64}$$
$$\boxed{x = 8 \, m}$$

03

$$b^2 = 1^2 + 2^2$$
$$b^2 = 1 + 4$$
$$b^2 = 5$$
$$b = \sqrt{5}$$
$$\boxed{\text{alternativa "B"}}$$

$$3^2 = (\sqrt{5})^2 + x^2$$
$$9 = 5 + x^2$$
$$9 - 5 = x^2$$
$$4 = x^2$$
$$x = \sqrt{4}$$
$$\boxed{x = 2}$$

(04)

$$y^2 = a^2 + a^2 \qquad z^2 = y^2 + a^2$$
$$y^2 = 2a^2 \qquad z^2 = 2a^2 + a^2$$
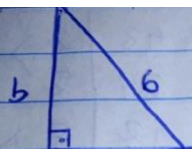$$z^2 = 3a^2$$

$$x^2 = a^2 + z^2$$
$$x^2 = a^2 + 3a^2 \qquad \boxed{\text{alternativa 'B'}}$$
$$x^2 = 4a^2$$
$$x = \sqrt{4a^2} \Rightarrow \boxed{2a}$$

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

---

(05)

32	2
16	2
8	2
4	2
2	2

$$6^2 = 2^2 + b^2$$
$$36 = 4 + b^2$$
$$36 - 4 = b^2$$
$$32 = b^2$$
$$b = \sqrt{32}$$
$$b = \sqrt{2^2 \cdot 2^2 \cdot 2}$$
$$b = 2\sqrt{2^2 \cdot 2}$$
$$b = 2 \cdot 2\sqrt{2}$$
$$b = 4\sqrt{2}$$

$$A = \frac{b \cdot 2}{2}$$

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

$$\boxed{A = 4\sqrt{2}}$$

$$\boxed{\text{alternativa 'C'}}$$

---

(06)
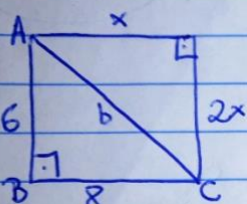
$$b^2 = 8^2 + 6^2$$
$$b^2 = 64 + 36$$
$$b = \sqrt{100}$$
$$b = 10$$

$$10^2 = x^2 + (2x)^2$$
$$100 = x^2 + 4x^2$$
$$100 = 5x^2$$
$$x^2 = \frac{100}{5}$$
$$x^2 = 20$$
$$x = \sqrt{20}$$
$$x = \sqrt{2^2 \cdot 5}$$
$$\boxed{x = 2\sqrt{5}}$$

07

$$da = 16.5 = 80\ cm \qquad df = 10.5 = 50\ cm$$
$$0,80\ m. \qquad\qquad 0,50\ m.$$
$$2 - 0,8 = 1,2\ m$$

$$h^2 = 1,2^2 + 0,5^2$$
$$h^2 = 1,44 + 0,25$$
$$h^2 = 1,69$$
$$h = \sqrt{1,69}$$
$$\boxed{h = 1,3}$$

alternativa "B"

08

$$8^2 = c^2 + 4^2$$
$$64 = c^2 + 16$$
$$64 - 16 = c^2$$
$$c^2 = 48$$
$$c = \sqrt{48}$$
$$c = \sqrt{2^2 \cdot 2^2 \cdot 3}$$
$$c = 2\sqrt{2^2 \cdot 3}$$
$$c = 2 \cdot 2\sqrt{3}$$
$$c = 4\sqrt{3}$$

$$
\begin{array}{c|c}
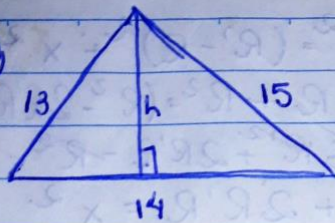48 & 2 \\
24 & 2 \\
12 & 2 \\
6 & 2 \\
3 & 3 \\
\end{array}
$$

$$13^2 = (x+4)^2 + (4\sqrt{3})^2$$
$$169 = x^2 + 8x + 16 + 4^2\sqrt{3}^2$$
$$169 = x^2 + 8x + 16 + 16 \cdot 3$$
$$169 = x^2 + 8x + 16 + 48$$
$$x^2 + 8x + 64 = 169$$
$$x^2 + 8x + 64 - 169 = 0$$
$$x^2 + 8x - 105 = 0$$
$$a = 1 \qquad b = 8 \qquad c = -105$$

$$\Delta = b^2 - 4.a.c$$
$$\Delta = 8^2 - 4.1.(-105)$$
$$\Delta = 64 - 4.-105$$
$$\Delta = 64 + 420$$
$$\Delta = 484$$

$$x = \frac{-b \pm \sqrt{484}}{2.a}$$
$$x = \frac{-8 \pm \sqrt{484}}{2.1}$$

$$x' = \frac{-8 + 22}{2} = \frac{14}{2} = 7$$
$$x'' = \frac{-8 - 22}{2} = \frac{-30}{2} = -15$$

$$\boxed{x' = 7}$$
$$x'' = -15$$

alternativa "D"

09

$$P = \frac{a + b + c}{2}$$

$$A = \sqrt{p(P-a)(p-b)(p-c)}$$

$$P = \frac{13 + 14 + 15}{2} =$$

$$P = \frac{42}{2} \Rightarrow P = 21$$

$$A = \sqrt{21(21-13)(21-14)(21-15)}$$

$$A = \sqrt{21.(8).(7).(6)}$$

$$A = \sqrt{168.7.6}$$

$$A = \sqrt{1176.6}$$

$$A = \sqrt{7056}$$

$$A = 84$$

$$A = \frac{b.h}{2}$$

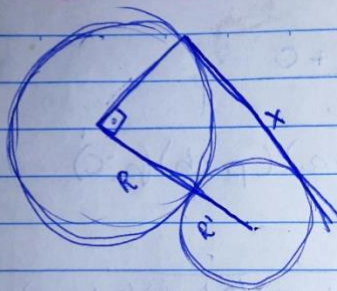$$84 = \frac{14.h}{2}$$

$$84.2 = 14h$$

$$168 = 14h$$

$$h = \frac{168}{14}$$

$$\boxed{h = 12}$$

10

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

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

$$R'^2 + 2R'R + R^2 = R'^2 + 2R'R - R^2 = x^2$$

$$2R'R + 2R'R = x^2$$

$$4R'R = x^2$$

$$x = \sqrt{4R'R}$$

$$x = \sqrt{2^2}\sqrt{R'R}$$

$$\boxed{x = 2\sqrt{R'R}}$$

(11)

$$c^2 \quad a^2$$
$$b^2 = 30^2 + 40^2$$
$$b^2 = 900 + 1600$$
$$b^2 = 2500$$
$$b = \sqrt{2500}$$
$$b = 50$$

$$20^2 = 50 \cdot n$$
$$\frac{400}{50} = n$$

$$\boxed{n = 8}$$

$$\boxed{\text{alternativa "C"}}$$