Tarefa básica - triângulo retângulo

1. $h^2 = (\sqrt{3})^2 + (\sqrt{4})^2$

$h^2 = 3 + 4$

$h^2 = 7$

$h = \sqrt{7}$

alternativa: B

2. $x^2 + 6^2 = 10^2$

$x^2 + 36 = 100$

$x^2 = 100 - 36$

$x = \sqrt{64}$

$\boxed{x = 8\,m}$

3. $(AC)^2 = 2^2 + 1^2$

$(AC)^2 = 4 + 1$

$(AC)^2 = 5$

$AC = \sqrt{5}$

$(CD)^2 = 3^2 - (\sqrt{5})^2$

$(CD)^2 = 9 - 5$

$(CD)^2 = 4$

$CD = \sqrt{4}$

$CD = 2$

alternativa: B

4. $y^2 = a^2 + a^2 \rightarrow z = \sqrt{2a^2}$

$y^2 = a^2 + (\sqrt{2a^2}) \rightarrow x = \sqrt{4a^2} \rightarrow x = 2a$

alternativa B

5. $h^2 = c^2 + c^2$

$6^2 = 2^2 + c^2$

$36 = 4 + c^2$

$36 - 4 = c^2$

$32 = c^2$

$c = \sqrt{32}$

↳ fatorando

32	2
16	2
8	2
4	2
2	2
1	

↳ $\sqrt{2^4 \cdot 2^1 \cdot 2}$

$2 \cdot 2 \cdot \sqrt{2}$

$4\sqrt{2}$

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

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

$A = \frac{8\sqrt{2}}{2}$

$A = 4\sqrt{2}$

alternativa: C

DOM SEG TER QUA QUI SEX SÁB
DOM LUN MAR MIÉ JUE VIE SÁB

6. 5,10 cm = 80cm = 0,80m

2,00 - 0,80 = 1,20m

5,10 = 5,06m = 0,50m

$AD^2 = AC^2 + DC^2$

$AD^2 = 1,20^2 + 0,50^2$

$AD^2 = 1,44 + 0,25$

$AD = \sqrt{1,69}$

$AD = 1,30m$

alternativa: B

7. $x^2 = 4^2 + x^2$

$AB^2 = 64 - 16$

$AB = \sqrt{48}$ → fatorando $2^4 \cdot 3$

$AB = 2^2\sqrt{3}$

$AB = 4\sqrt{3}$ m

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

$169 = x^2 + 8x + 16 + 16 \cdot 3$

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

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

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

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

$\Delta = 64 - 4 \cdot 1 \cdot (-105)$

$\Delta = 64 + 420$

$\Delta = 484$

$x = \frac{-8 \pm \sqrt{484}}{2 \cdot 1}$

$x = \frac{-8 \pm 22}{2}$

$x' = \frac{-8 - 22}{2} = x' = -15$

$x'' = \frac{-8 + 22}{2} = x'' = \frac{14}{2} = (7)$

alternativa: D

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

$y^2 = 64 - 16$

$y = \sqrt{48}$

S $7 + (-15) = (-8)$ $x' = 7m$

P $7 \cdot (-15) = (-105)$ $x'' = (-105)$

↳ não convém

9 $15^2 = h^2 + (14-x)^2$

$225 = h^2 + 196 - 28x + x^2$

$h^2 = 225 - 196 + 28x - x^2$

$h^2 = 29 + 28x - x^2$

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

$h^2 = 169 - 25$

$h = \sqrt{144}$

$h = 12$

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

$169 = 29 + 28x - x^2 + x^2$

$140 = 28x$

$x = 5$

10

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

$r^2 + 2rr' + r'^2 = r^2 - 2rr' + r'^2 + x^2$

$x^2 = 4rr'$

$x = \sqrt{4rr'} \rightarrow x = 2\sqrt{rr'}$

11 $x^2 = 40^2 + 30^2$

$x^2 = 1600 + 900$

$x = \sqrt{2500}$

$x = 50$

$\frac{20}{Y} = \frac{50}{20} \Rightarrow 50y = 400 \Leftrightarrow y = \frac{400}{50} \rightarrow y = 8$

alternativa C