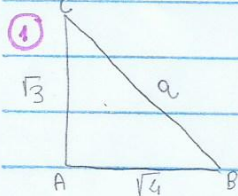


tarefas básicas

TRIÂNGULO RETÂNGULO



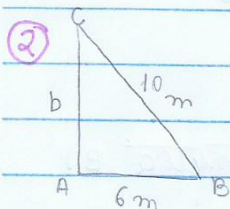
Teorema de Pitágoras

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

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

$$a = \sqrt{3+4}$$

$$a = \sqrt{7} \rightarrow \text{Alternativa B)}$$



Teorema de Pitágoras

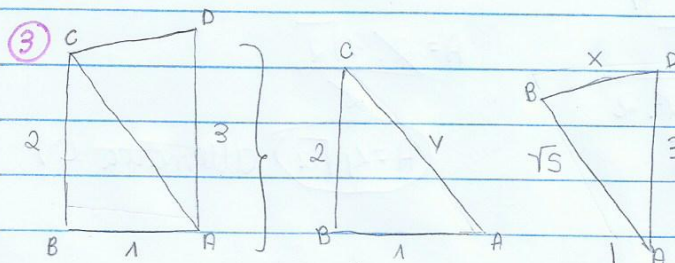
$$a^2 = b^2 + c^2$$

$$10^2 = b^2 + 6^2$$

$$b^2 = 100 - 36$$

$$b = \sqrt{64}$$

$$b = 8m$$



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

$$y^2 = 4 + 9$$

$$y = \sqrt{13}$$

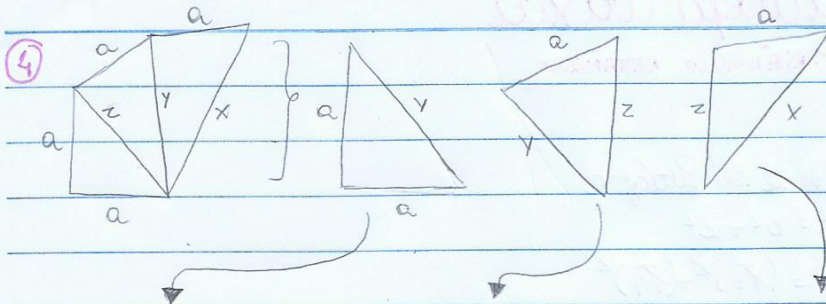
$$3^2 = x^2 + (\sqrt{5})^2$$

$$9 = x^2 + 5$$

$$x^2 = 9 - 5$$

$$x = \sqrt{4}$$

$$x = 2 \rightarrow \text{alternativa B)}$$



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

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

$$y = \sqrt{2a^2}$$

$$y = a\sqrt{2}$$

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

$$z^2 = (a\sqrt{2})^2 + a^2$$

$$z^2 = a^2 \cdot 2 + a^2$$

$$z = \sqrt{3a^2}$$

$$z = a\sqrt{3}$$

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

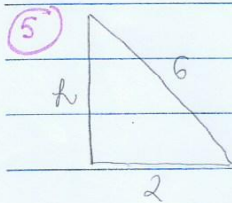
$$x^2 = a^2 + (a\sqrt{3})^2$$

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

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

$$x = 2a$$

alternativa B)



$$6^2 = h^2 + 2^2$$

$$36 = h^2 + 4$$

$$h^2 = 36 - 4$$

$$h = \sqrt{32}$$

$$2^5 \rightarrow h = \sqrt{2^4 \cdot 2^2 \cdot 2}$$

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

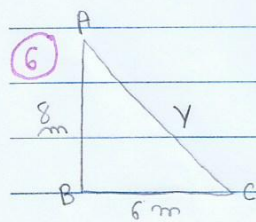
Área do triângulo

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

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

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

alternativa C)

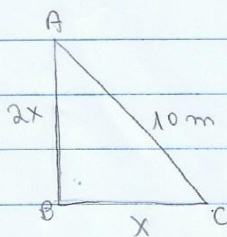


$$y^2 = 6^2 + 8^2$$

$$y^2 = 36 + 64$$

$$y = \sqrt{100}$$

$$y = 10 \text{ m}$$



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

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

$$100 = 5x^2$$

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

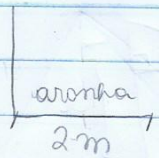
$$x = \sqrt{20}$$

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

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

alternativa A)

7



aranha = 16 cm/s
formiga = 10 cm/s
tempo = 5s

ARANHA - 1 s - 16 cm

5 s - x

x = 80 cm

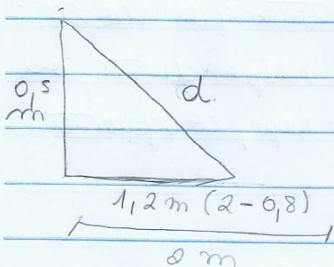
FORMIGA - 1 s - 10 cm

5 s - y

y = 50 cm

formiga andou 50 cm → 0,5 m

aranha andou 80 cm → 0,8 m



$$d^2 = 0,5^2 + 1,2^2$$

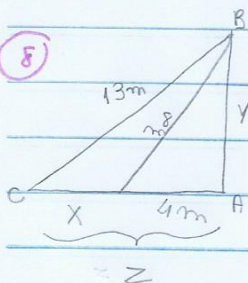
$$d^2 = 0,25 + 1,44$$

$$d^2 = 1,69$$

$$d = \sqrt{1,69}$$

$$d = 1,3 \text{ m} \quad \text{Alternativa B)}$$

8



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

$$64 = y^2 + 16$$

$$y^2 = 64 - 16$$

$$y = \sqrt{48}$$

$$y = \sqrt{2 \cdot 2 \cdot 3}$$

$$y = 4\sqrt{3} \text{ m}$$

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

$$169 = z^2 + 48$$

$$z^2 = 169 - 48$$

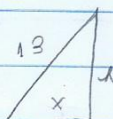
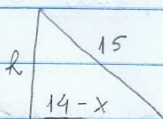
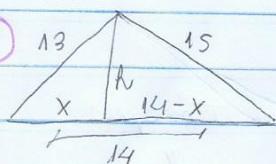
$$z = \sqrt{121}$$

$$z = 11 \text{ m}$$

$$x = z - 4 \rightarrow 11 - 4 = 7 \text{ m}$$

Alternativa D)

9



$$13^2 = h^2 + x^2 \quad (2^\circ)$$

$$169 = 15^2 - (14-x)^2 + x^2$$

$$169 = 225 - (196 - 28x + x^2) + x^2$$

$$169 = 29 + 28x$$

$$28x = 169 - 29$$

$$x = 140 = 5$$

28

1º

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

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

$$13^2 = h^2 + x^2 \quad (3^\circ)$$

$$169 = h^2 + x^2$$

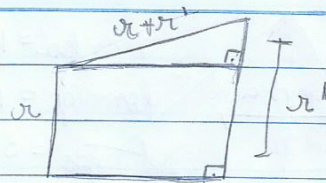
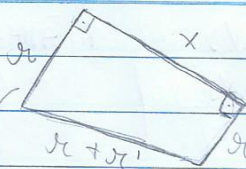
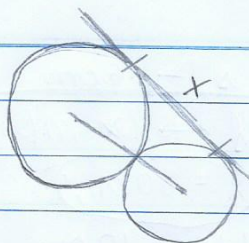
$$h^2 = 169 - 25$$

$$h = \sqrt{144} = 12$$

Resposta = 12 //

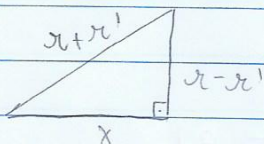
tilibra

10



→ ângulos de 90°
iguais formados
pelos pontos de tangência
com os raios dos círculos

→ ângulos de 90°
do retângulo e dos
triângulos são cor-
respondentes, ou
seja, congruentes.



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

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

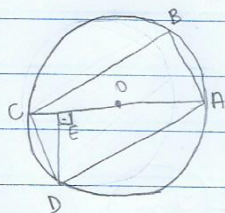
$$x^2 = r^2 + 2 \cdot r \cdot r' + (r')^2 - (r')^2 - 2 \cdot r \cdot r' + r^2$$

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

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

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

11



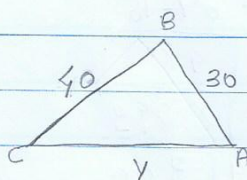
$$BC = 40$$

$$AB = 30$$

$$CD = 20$$

$$\angle DEA = 90^\circ$$

$$CE = x$$



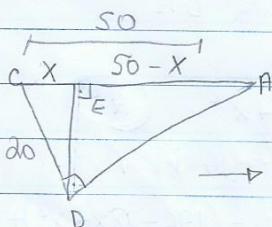
$$y^2 = 40^2 + 30^2$$

$$y^2 = 1600 + 900$$

$$y = \sqrt{2500}$$

$$y = 50$$

$$CA = 50$$



→ $b^2 = m \cdot a$ → relações métricas no triângulo
retângulo

$$20^2 = x \cdot 50$$

$$50x = 400$$

$$x = \frac{400}{50} = 8 \text{ Alternativa C)}$$

5p