

INSTITUTO FEDERAL

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SALA: 317

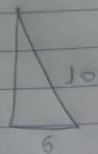
MATEMATICA

SEMANA 23

$$\begin{aligned} \textcircled{1} \quad x^2 &= (\sqrt{3})^2 + (\sqrt{4})^2 \\ x^2 &= 3 + 4 \\ x &= \sqrt{7} \end{aligned}$$

Resposta: (B)

②



$$\begin{aligned} 10^2 &= 6^2 + x^2 \\ 100 &= 36 + x^2 \\ x^2 &= 64 \end{aligned}$$

Resposta: (E)

$$x = 8$$

③

$$\begin{aligned} x^2 &= 3^2 + 2^2 \\ x^2 &= 9 + 4 \\ x &= \sqrt{13} \end{aligned}$$

$$\begin{aligned} 3^2 &= (\sqrt{5})^2 + y^2 \\ 9 &= 5 + y^2 \\ y^2 &= 4 \\ y &= 2 \end{aligned}$$

Resposta: (B)

④

$$\begin{aligned} y^2 &= a^2 + a^2 \\ y^2 &= 2a^2 \\ y &= 2a \end{aligned}$$

$$\begin{aligned} z^2 &= a^2 + 2a^2 \\ z^2 &= 3a^2 \\ z &= 3a \end{aligned}$$

$$\begin{aligned} x^2 &= 3a^2 + a^2 \\ x^2 &= 4a^2 \\ x &= \sqrt{4a^2} = 2a \end{aligned}$$

Resposta: (B)

⑤

$$\begin{aligned} 6^2 &= 2^2 + x^2 \\ 36 &= 4 + x^2 \\ x^2 &= 32 \\ x &= \sqrt{32} = 4\sqrt{2} \end{aligned}$$

$$\begin{aligned} A &= 2 \cdot 4\sqrt{2} \\ A &= 8\sqrt{2} \end{aligned}$$

Resposta: (C)

⑥

$$\begin{aligned} x^2 &= 6^2 + 8^2 \\ x^2 &= 36 + 64 \\ x^2 &= 100 \\ x &= 10 \end{aligned}$$

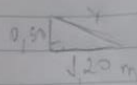
$$\begin{aligned} 10^2 &= x^2 + (2 \cdot 7)^2 \\ 100 &= x^2 + 196 \\ x^2 &= -96 \end{aligned}$$

Resposta: (A)

$$\textcircled{7} \quad A = 16 \times 5 = 80$$

$$F = 12 \times 5 = 60$$

$$200 - 80 = 120 \text{ m}$$



$$x^2 = 1,465$$

$$x = 1,21$$

$$x = \sqrt{1,465} = 1,21 \approx 1,3 \text{ m}$$

Resposta: (B)

$$\textcircled{8} \quad 8^2 = 4^2 + x^2$$

$$64 = 16 + x^2$$

$$x^2 = 48$$

$$x = \sqrt{48} = 4\sqrt{3}$$

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

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

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

$$(x+4)^2 = 124$$

$$x+4 = \sqrt{124}$$

$$x = 11 - 4 = 7$$

Resposta: (D)

$$\textcircled{9} \quad 15^2 = h^2 + n^2$$

$$13^2 = h^2 + m^2$$

$$m + n = 14$$

$$15^2 - 13^2 = n^2 - m^2$$

$$2 \cdot 28 = 14 \cdot (m - n)$$

$$m - n = 4$$

$$n = 9$$

$$15^2 = h^2 + 9^2$$

$$h^2 = 144$$

$$h = 12$$

Resposta: 121

$$\textcircled{10} \quad (R+r)^2 = (R-r)^2 + x^2$$

$$x^2 = (2R) \cdot (2r)$$

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

Resposta: $2\sqrt{Rr}$

$$\textcircled{11} \quad x^2 = 40^2 + 30^2$$

$$x^2 = 1600 + 900$$

$$x^2 = 2500$$

$$x = \sqrt{2500} = 50$$

$$C = a \cdot n$$

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

$$400 = 50n$$

$$n = \frac{400}{50} = 8$$

Resposta: (C)