

Aluno(a) ● ● ●

Disciplina

Matemática

Professor(a)

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Ano

9º

Turma

Data

14/04

Lista nº 11 – Gabarito

1.a) $x^2 = (6)^2 + (8)^2$

$$x^2 = 36 + 64$$

$$x^2 = 100$$

$$x = \sqrt{100}$$

$$x = 10 \text{ cm.}$$

b) $(15)^2 = (9)^2 + x^2$

$$225 = 81 + x^2$$

$$- x^2 = 81 - 225$$

$$- x^2 = - 144.(- 1)$$

$$x^2 = 144$$

$$x = \sqrt{144}$$

$$x = 12 \text{ cm.}$$

c) $(13)^2 = (5)^2 + x^2$

$$169 = 25 + x^2$$

$$- x^2 = 25 - 169$$

$$- x^2 = - 144.(- 1)$$

$$x^2 = 144$$

$$x = \sqrt{144}$$

$$x = 12 \text{ cm.}$$

2. $x^2 = (3)^2 + (4)^2$

$$x^2 = 9 + 16$$

$$x^2 = 25$$

$$x = \sqrt{25}$$

$$x = 5 \text{ metros.}$$

O comprimento da escada é 5 metros.

3.a) (V)

b) (V)

c) (F) “a” é a hipotenusa.

d) (F) O teorema não serve para calcular área, apenas para relacionar lados.

4. $x^2 = (24)^2 + (7)^2$

$$x^2 = 576 + 49$$

$$x^2 = 625$$

$$x = \sqrt{625}$$

$$x = 25 \text{ metros. O comprimento do arame deve ser de 25 metros}$$

5. a) $a = 9$, $b = 9$ e $c = 2$.

b) $\Delta = b^2 - 4.a.c$

$\Delta = 9^2 - 4.9.2$

$\Delta = 81 - 72$

$\Delta = 9$.

c) $x = \frac{-b \pm \sqrt{\Delta}}{2.a}$

$x = \frac{-9 \pm \sqrt{9}}{2.9}$

$x = \frac{-9 \pm 3}{18}$

$x' = \frac{-6}{18}$

$x' = -\frac{1}{3}$

$x'' = \frac{-12}{18}$

$x'' = -\frac{2}{3}$

$x'' = -\frac{2}{3}$

$x'' = -\frac{2}{3}$

As raízes são $x' = -\frac{6}{18}$ e $x'' = -\frac{2}{3}$.

6. a) $x^2 - 4x - 32 = 0$

$\Delta = b^2 - 4.a.c$

$\Delta = (-4)^2 - 4.1.(-32)$

$\Delta = 16 + 128$

$\Delta = 144$.

$x = \frac{-b \pm \sqrt{\Delta}}{2a}$

$x = \frac{-(-4) \pm \sqrt{144}}{2.1}$

$x = \frac{4 \pm 12}{2}$

$x' = \frac{16}{2} = 8$

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7. $3x^2 + x = 92 - 10x$

$3x^2 + x + 10x - 92 = 0$

$3x^2 + 11x - 92 = 0$

$\Delta = b^2 - 4.a.c$

$\Delta = 11^2 - 4.3.(-92)$

$\Delta = 121 + 1104$

$\Delta = 1225$.

$$x = \frac{-b \pm \sqrt{\Delta}}{2a}$$

$$x = \frac{-11 \pm \sqrt{1225}}{2.3}$$

$$x = \frac{-11 \pm 35}{6}$$

$$x' = \frac{24}{6} = 4$$

$$x' = -\frac{46}{4} = -\frac{23}{2}$$

O número é 4.

$$8. \quad x + x^2 = 30$$

$$x^2 + x - 30 = 0$$

$$\Delta = b^2 - 4ac$$

$$\Delta = 1^2 - 4.1.(-30)$$

$$\Delta = 1 + 120$$

$$\Delta = 121$$

$$x = \frac{-b \pm \sqrt{\Delta}}{2a}$$

$$x = \frac{-1 \pm \sqrt{121}}{2.1}$$

$$x = \frac{-1 \pm 11}{2}$$

$$x' = \frac{10}{2} = 5$$

$$x'' = -\frac{12}{2} = -6$$

Os números procurados são 5 e -6.

