

Aluno(a) ● ● ●

Disciplina

Matemática

Professor(a)

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Ano

9º

Turma

Data

04/08

Lista nº 21 - Gabarito

1. a) $3x + 5 < 2$

$$3x < 2 - 5$$

$$3x < -3$$

$$x < -3/3$$

$$x < -1.$$

b) $7 - 2x > 3x + 5$

$$-2x - 3x > +5 - 7$$

$$-5x > -2.(-1)$$

$$5x < 2$$

$$x < 2/5$$

c) $5 > 7 - 2x$

$$2x > 7 - 5$$

$$2x > 2$$

$$x > 2/2$$

$$x > 1.$$

2. a) $7x + 2 > 65$

$$7x > 65 - 2$$

$$7x > 63$$

$$x > 63/7$$

$$x > 9.$$

b) $7x + 19 > 9x + 25$

$$7x - 9x > +25 - 19$$

$$-2x > 6.(-1)$$

$$2x < -6$$

$$x < -6/2$$

$$x < -3.$$

c) $25x - 1 \geq 20x + 1$

$$25x - 20x \geq +1 + 1$$

$$5x \geq 2$$

$$x \geq 2/5$$

3. a) $3(2x - 1) < 2(x + 1) + 3$

$$6x - 3 < 2x + 2 + 3$$

$$6x - 2x < +2 + 3 + 3$$

$$4x < 8$$

$$x < 8/4$$

$$x < 2.$$

b) $3(x - 1) - 2(x - 3) < 10$

$$3x - 3 - 2x + 6 < 10$$

$$3x - 2x < 10 + 3 - 6$$

$$x < 13 - 6$$

$$x < 7.$$

$$4. \frac{x}{4} + 2 > \frac{x-3}{2}$$

$$\frac{x}{4} + \frac{8}{4} > \frac{2(x-3)}{4}$$

$$x + 8 > 2(x - 3)$$

$$x + 8 > 2x - 6$$

$$x - 2x > -6 - 8$$

$$-x > -14. (-1)$$

$$x < 14.$$

5. a) (V)

b) (F)

c) (V)

d) (V)

6. a) Altura da escada:

$$\text{Sen}30^\circ = \frac{h}{8}$$

$$\frac{1}{2} = \frac{h}{8}$$

$$2.h = 8$$

$$h = \frac{8}{2}$$

$$h = 4 \text{ m}$$

b) Distância da parede

$$\text{Cos}30^\circ = \frac{x}{8}$$

$$\frac{\sqrt{3}}{2} = \frac{x}{8}$$

$$2x = 8\sqrt{3}$$

$$x = \frac{8\sqrt{3}}{2}$$

$$x = 4\sqrt{3} \text{ m ou } 6,9 \text{ m}$$

$$7. \text{Tg}45^\circ = \frac{h}{18}$$

$$1 = \frac{h}{18}$$

$$h = 18 \text{ m}$$

8. a) Altura do poste.

$$\text{Sen}60^\circ = \frac{h}{12}$$

$$\frac{\sqrt{3}}{2} = \frac{h}{12}$$

$$2h = 12\sqrt{3}$$

$$h = \frac{12\sqrt{3}}{2}$$

$$h = 6\sqrt{3} \text{ m ou } 10,4 \text{ m}$$

b) Distância da base ao ponto de fixação.

$$\text{Cos}60^\circ = \frac{x}{12}$$

$$\frac{1}{2} = \frac{x}{12}$$

$$2x = 12$$

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

$$x = 6 \text{ m}$$

$$9. \text{ a) } \text{Sen}30^\circ = \frac{h}{6}$$

$$\frac{1}{2} = \frac{h}{6}$$

$$2.h = 6$$

$$h = \frac{6}{2}$$

$$h = 3 \text{ m}$$

b) Projeção horizontal.

$$\text{Cos}30^\circ = \frac{x}{6}$$

$$\frac{\sqrt{3}}{2} = \frac{x}{6}$$

$$2.x = 6.\sqrt{3}$$

$$x = \frac{6\sqrt{3}}{2}$$

$$x = 3\sqrt{3} \text{ m ou } 5,2 \text{ m}$$