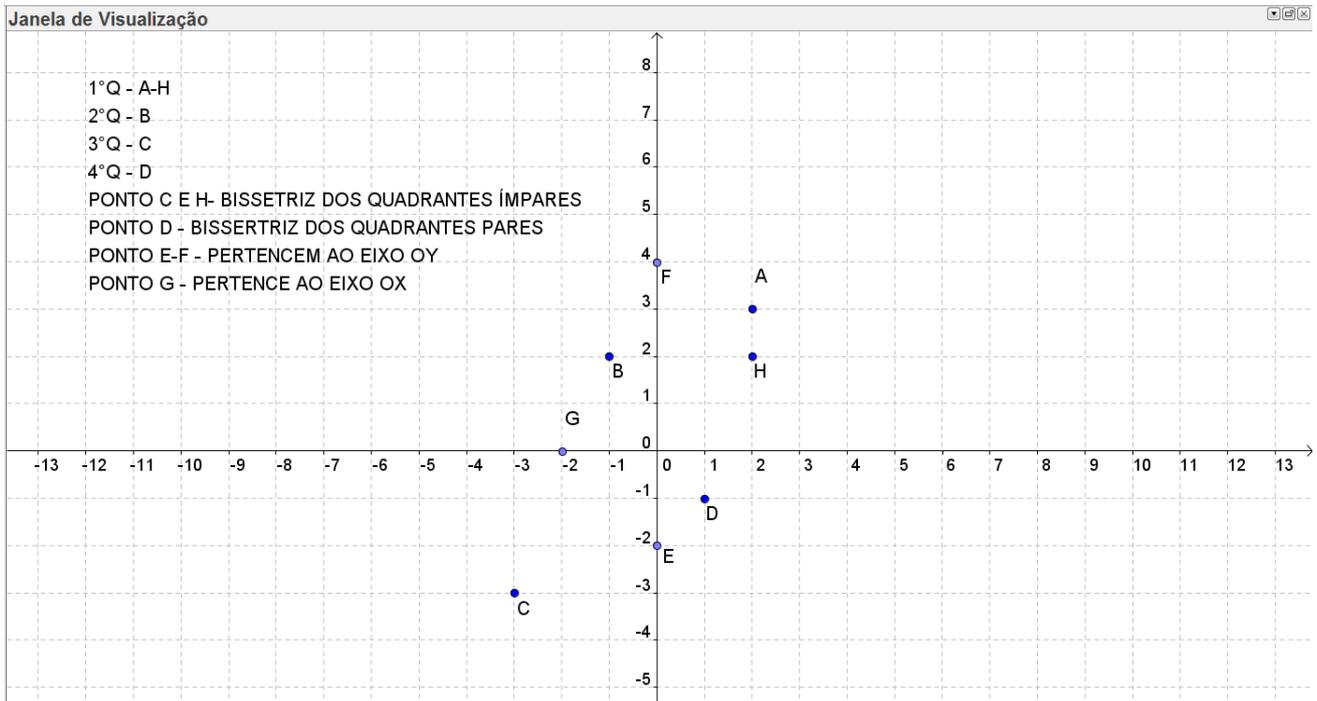


GABARITO LISTA 1 – ANALITICA

EXERCÍCIOS 1 E 2 – RESOLVIDOS COM AUXILIO DO SOFTWARE GEOGEBRA.



$$\textcircled{3} \quad d = \sqrt{(x_A - x_B)^2 + (y_A - y_B)^2}$$

$$\begin{aligned} \text{a) } d &= \sqrt{(2-1)^2 + (3-5)^2} \\ d &= \sqrt{1+4} \\ d &= \sqrt{5} \mu \end{aligned}$$

$$\begin{aligned} \text{b) } d &= \sqrt{(2+1)^2 + (-2-2)^2} \\ d &= \sqrt{9+16} \\ d &= \sqrt{25} \quad d = 5\mu \end{aligned}$$

$$\begin{aligned} \text{c) } d &= \sqrt{(0-\sqrt{3})^2 + (3+1)^2} \\ d &= \sqrt{3+16} \\ d &= \sqrt{19} \mu \end{aligned}$$

$$\begin{aligned} \text{d) } d &= \sqrt{(0-a)^2 + (-1+a-a+1)^2} \\ d &= \sqrt{a^2+0} \\ d &= a \end{aligned}$$

$$(4) A(5, -12) \quad O(0,0)$$

$$d = \sqrt{(5-0)^2 + (-12-0)^2}$$
$$d = \sqrt{25+144}$$
$$d = 13u$$

$$(5) d_{AB} = 1 \quad d = \sqrt{(2-1)^2 + (a+4)^2} = (1)^2$$

$$1 + a^2 + 8a + 16 = 1$$
$$a^2 + 8a + 16 = 0$$
$$a = \frac{-8 \pm 0}{2} = \boxed{-4}$$

$$a = \frac{-8 \pm \sqrt{64-64}}{2}$$

$$(6) d_{BC} = d_{BA}$$

$$\sqrt{(2+1)^2 + (3-0)^2} = \sqrt{(m-2)^2 + (-1-3)^2}$$

$$9+9 = m^2 - 4m + 4 + 16$$

$$m^2 - 4m + 2 = 0$$

$$m = \frac{4 \pm \sqrt{16-8}}{2}$$

$$m = \frac{4 \pm \sqrt{8}}{2} \Rightarrow m = \frac{4 \pm 2\sqrt{2}}{2}$$

$$\boxed{m = 2 \pm \sqrt{2}}$$

$$(7) P(x, 0) \rightarrow E \text{ abscissa logo } y=0$$

$$d_{AP} = d_{BP}$$

$$\sqrt{(x-1)^2 + (0-1)^2} = \sqrt{(x-2)^2 + (0+2)^2}$$

$$x^2 - 2x + 1 + 1 = x^2 - 4x + 4 + 4$$

$$2x = 8 - 2$$

$$\boxed{x = 3}$$

$$\textcircled{8} \text{ a) } x_M = \frac{1+4}{2} = \frac{5}{2}$$

$$y_M = \frac{-6+8}{2} = \frac{2}{2} = 1$$

$$M\left(\frac{5}{2}, 1\right)$$

$$\text{b) } x_M = \frac{6a-1+2a+1}{2} = 4a$$

$$y_M = \frac{b+1+3b-5}{2} = \frac{4b-4}{2} = 2b-2$$

$$M(4a; 2b-2)$$

$$\textcircled{9} \text{ M}(1, -4) \text{ m\u00e9dio } A(3, 5) \text{ B}(x, y) ?$$

$$x_M = \frac{x_A + x_B}{2} \Rightarrow 1 = \frac{3+x}{2}$$

$$3+x = 2$$

$$x = 2-3$$

$$\boxed{x = -1}$$

$$y_M = \frac{5+y}{2} \Rightarrow -4 = \frac{5+y}{2}$$

$$5+y = -8$$

$$y = -8-5$$

$$\boxed{y = -13}$$

$$\textcircled{10} \text{ a) } \begin{vmatrix} 2 & 3 & 1 \\ 2 & -4 & 1 \\ 2 & -1 & 1 \end{vmatrix} = 0$$

Se $\det = 0 \rightarrow$ colineares/alinhados

$$\text{b) } \begin{vmatrix} 1 & 0 & 1 \\ -3 & 2 & 1 \\ 2 & 4 & 1 \end{vmatrix} = -18$$

Como $\det \neq 0$ n\u00e3o alinhados

11) triângulo → pontos não alinhados

$$\begin{vmatrix} 4 & -6 & 1 \\ x & -8 & 1 \\ x & -2 & 1 \end{vmatrix} \neq 0$$

$$-32 - 2x + 6x + 8x - 6x + 8 \neq 0$$

$$6x \neq 24$$

$$x \neq \frac{24}{6}$$

$$\boxed{x \neq 4}$$

$$12) \begin{vmatrix} a+1 & 1 & 1 \\ 3 & a+1 & 1 \\ 5 & 4 & 4 \end{vmatrix} = 0$$

$$(a+1)^2 + 12 + 5 - 5(a+1) - 3 - 4(a+1) = 0$$

$$a^2 + 2a + 1 + 17 - 5a - 5 - 3 - 4a - 4 = 0$$

$$a^2 - 7a + 6 = 0$$

$$a = \frac{7 \pm \sqrt{49 - 24}}{2} \quad a = \frac{7 \pm \sqrt{25}}{2}$$

$$a = \frac{7 \pm 5}{2} \quad \begin{matrix} \boxed{6} \\ \boxed{1} \end{matrix}$$