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Calcular Equação da reta tangente à curva.

$$C: (x-3)^2 + (y+3)^2 = 9$$

$$A(-3, -2)$$

$$ax + by + c = 0$$

$$B(3, 2)$$

$$6 \cdot (-3) + 4 \cdot (-2) + c = 0$$

$$\overline{AB}(6, 4)$$

$$c = 26$$

$$C = (3, -3)$$

$$n = 3$$

$$d(P, C) = \frac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}}$$

$$d(P, C) = \frac{|6 \cdot 3 + 4 \cdot (-3) + 26|}{\sqrt{6^2 + 4^2}}$$

$$d(P, C) = \frac{|18 - 12 + 26|}{\sqrt{36 + 16}}$$

$$d(P, C) = \frac{32}{\sqrt{52}}$$

$$d = \frac{32}{\sqrt{52}} \cdot \frac{2\sqrt{13}}{2\sqrt{13}} \Rightarrow \frac{64\sqrt{13}}{52} = \frac{16\sqrt{13}}{13}$$

$$2) F_1(-6, 0) \text{ e } F_2(0, 0) \quad n = 10$$

$$\sqrt{(x-6)^2 + (y-0)^2} + \sqrt{(x+2)^2 + (y+0)^2} = 10$$

$$\sqrt{x^2 - 12x + 36 + y^2} = 10 - \sqrt{x^2 + 4x + 4 + y^2}$$

$$x^2 - 12x + 36 + y^2 = 100 - 20\sqrt{x^2 + 4x + 4 + y^2} + 4x + 4$$

$$-12x + 36 = 104 - 20\sqrt{x^2 + 4x + 4 + y^2} + 4x$$

$$9x^2 - 36x - 189 + 25y^2 = 0$$

$$3) F_1(0, -2) \text{ y } F_2(0, 2)$$

$$A_1(0, -1) \text{ y } A_2(0, 1)$$

$$a = 1$$

$$c = 2$$

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

$$b^2 = 4 - 1$$

$$b = \sqrt{3}$$

$$\frac{y^2}{a^2} - \frac{x^2}{b^2} = 1$$

$$\frac{y^2}{1} - \frac{x^2}{(\sqrt{3})^2} = 1$$

$$\frac{y^2}{1} - \frac{x^2}{3} = 1$$

a) a parabola.

$$y = \frac{x^2}{4a} \text{ , , } y = \frac{x^2}{16}$$

b)

$$a = 4$$

$$\text{Focus} = (0, 4)$$

$$d: y = -4$$

$$\text{Vertex} (0, 0)$$

$$\text{Parámetro} = 8$$

