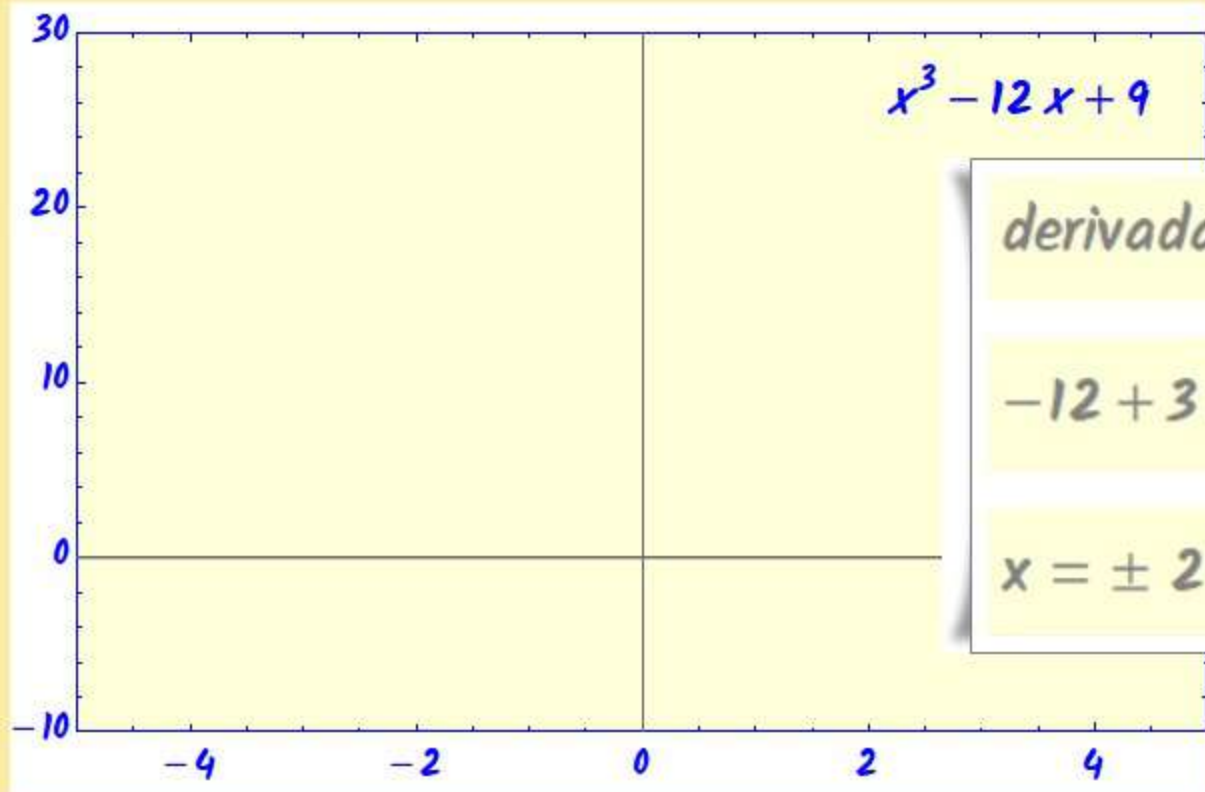


derivada

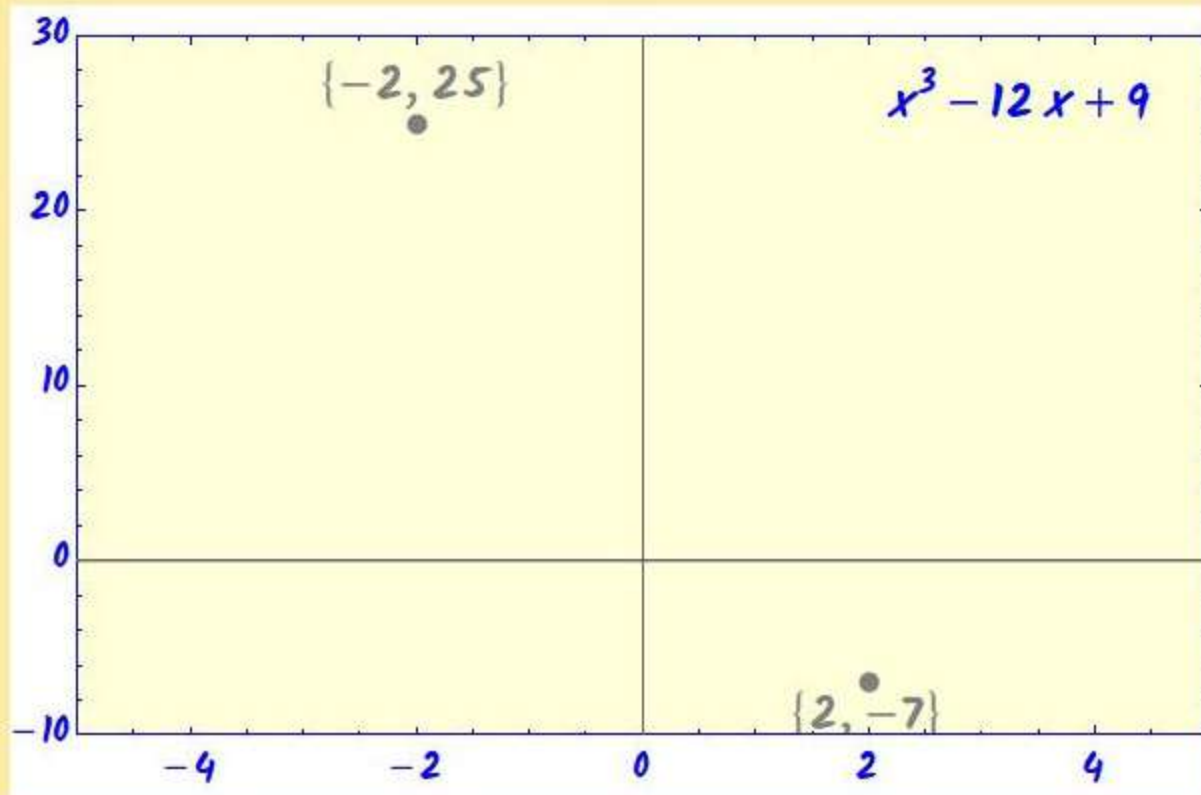
$$-12 + 3x^2$$



derivada

$$-12 + 3x^2$$

$$x = \pm 2$$



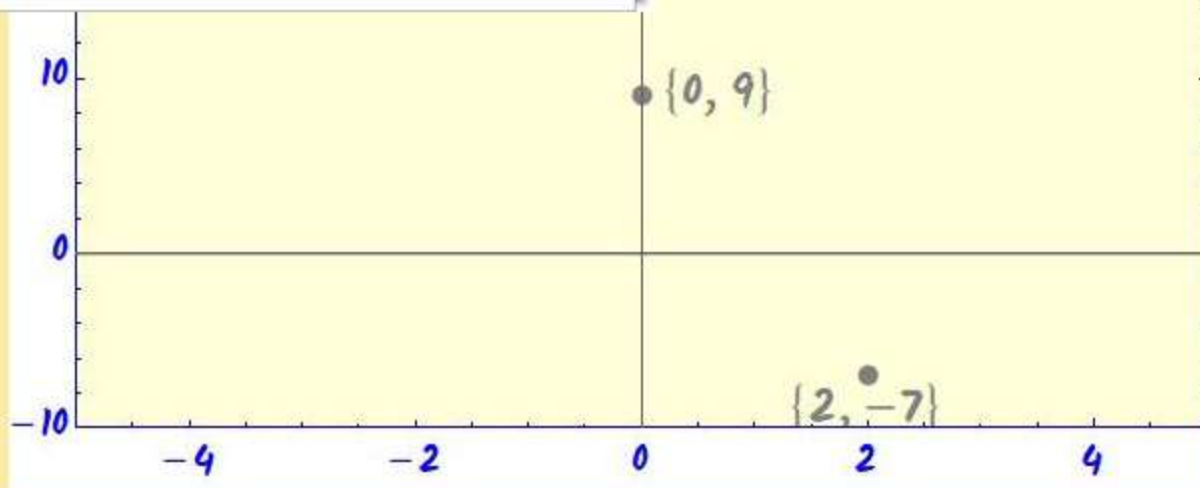
$$x = 3$$

um dos 3 zeros função

MS123



$$x^3 - 12x + 9$$



$$x = 3$$

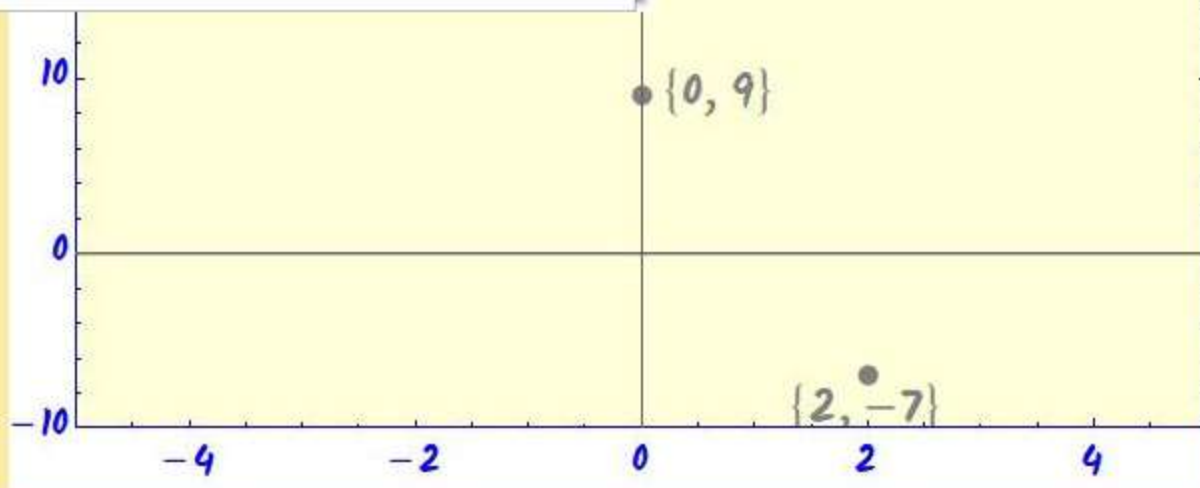
um dos 3 zeros função

$$x^3 - 12x + 9 = (x - 3)(x^2 + ax + b)$$

MS123



$$x^3 - 12x + 9$$



$$x = 3$$

um dos 3 zeros função

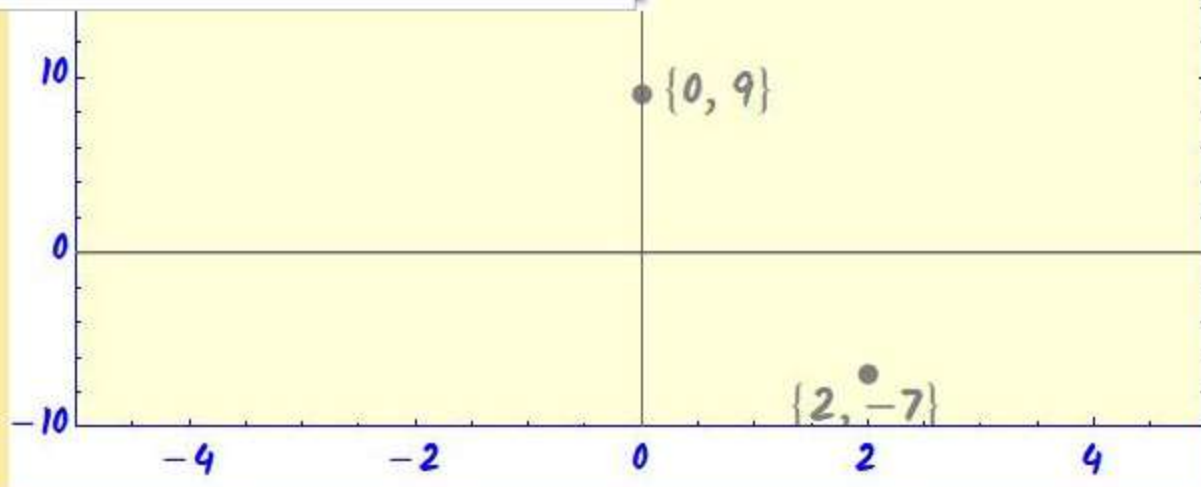
$$x^3 - 12x + 9 = (x - 3)(x^2 + ax + b)$$

$$a = 3 \text{ e } b = -3$$

MS123



$$x^3 - 12x + 9$$





$$x = 3$$

um dos 3 zeros função

$$x^3 - 12x + 9 = (x - 3)(x^2 + ax + b)$$

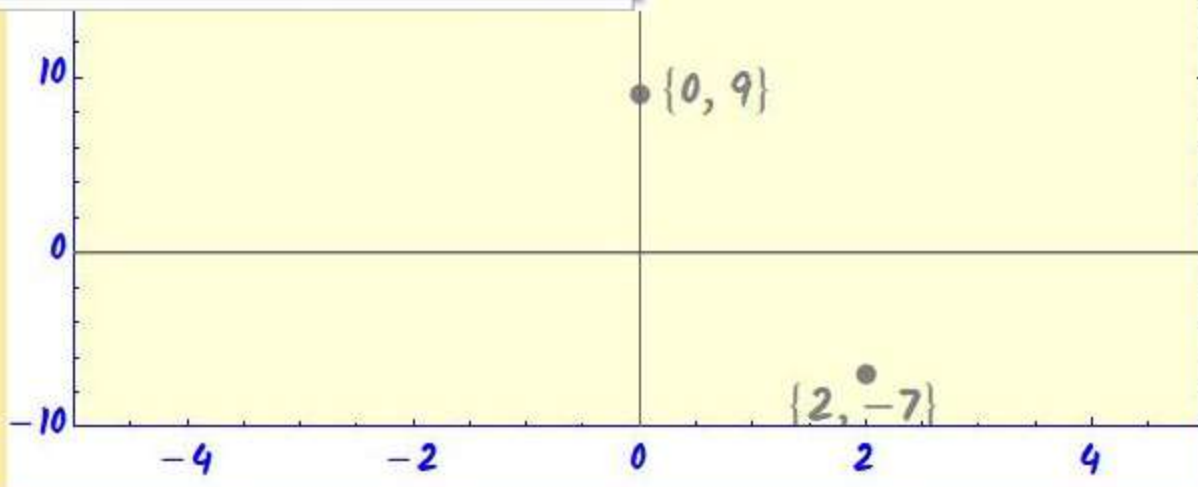
$$a = 3 \text{ e } b = -3$$

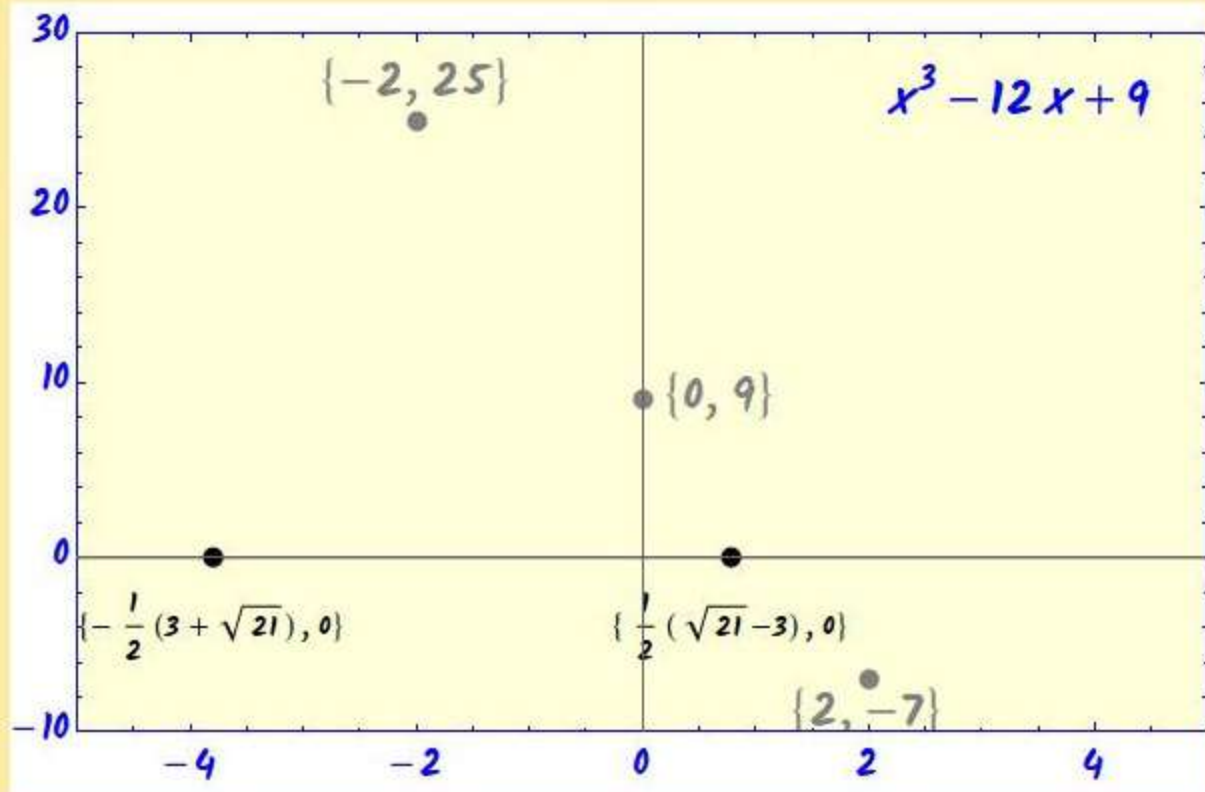
$$-\frac{1}{2}(3 + \sqrt{21}) \text{ e } \frac{1}{2}(\sqrt{21} - 3)$$

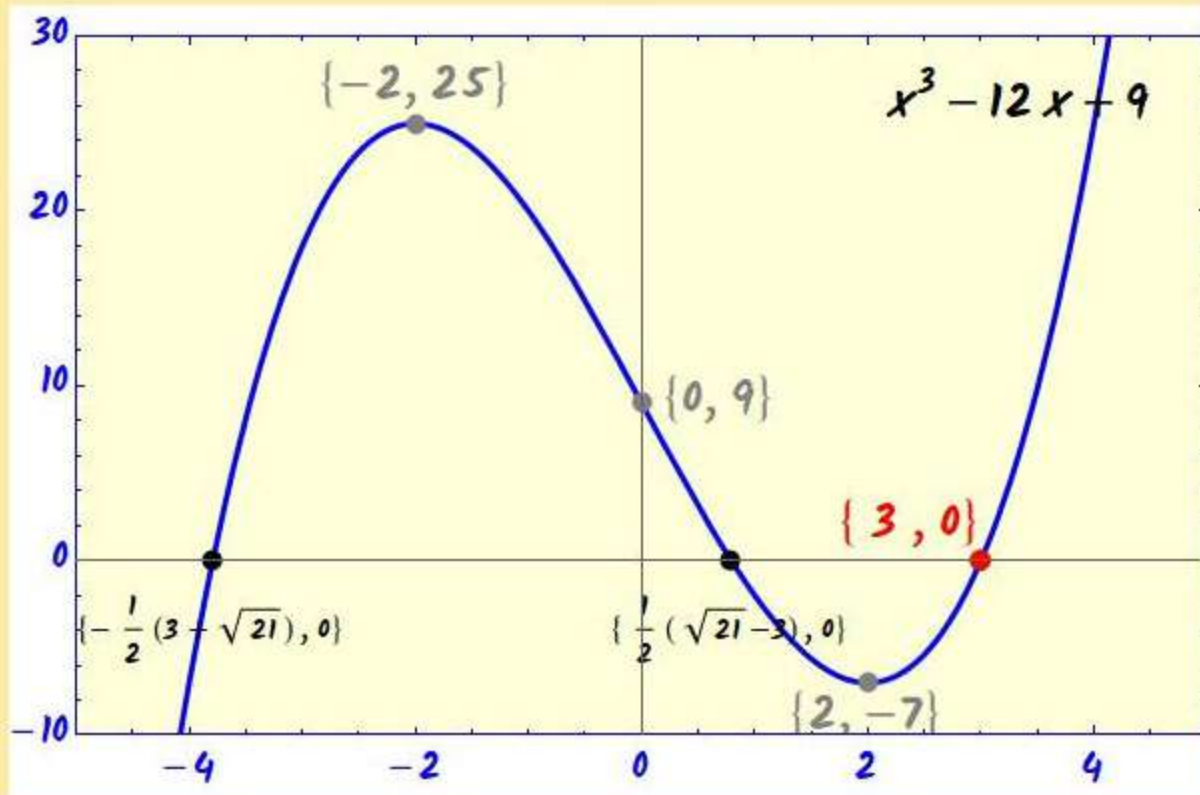
MS123

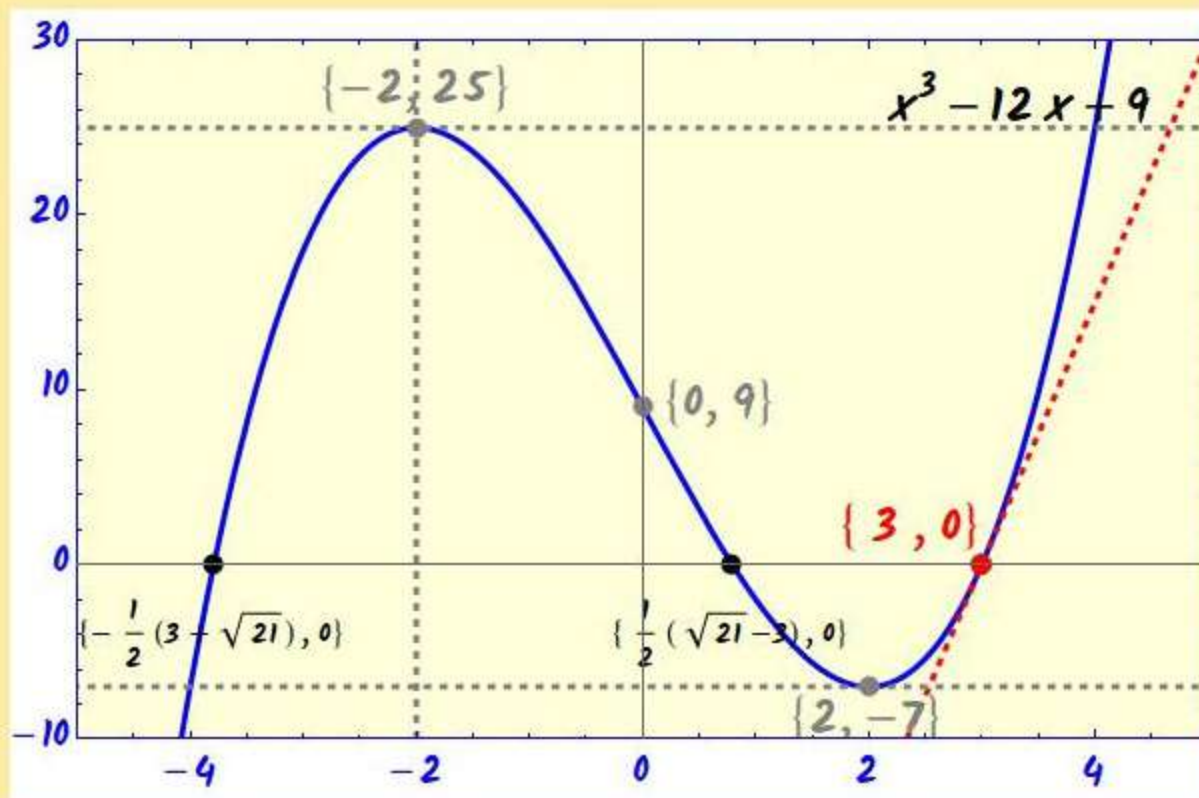


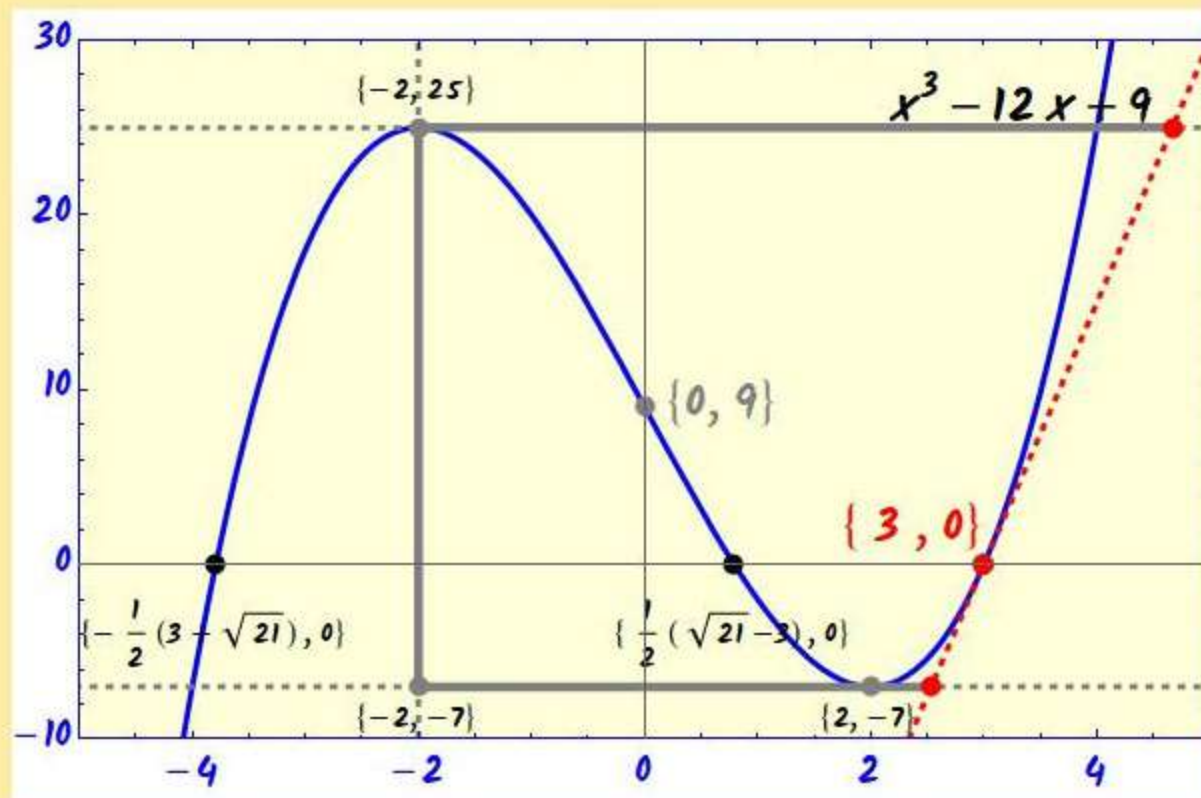
$$x^3 - 12x + 9$$

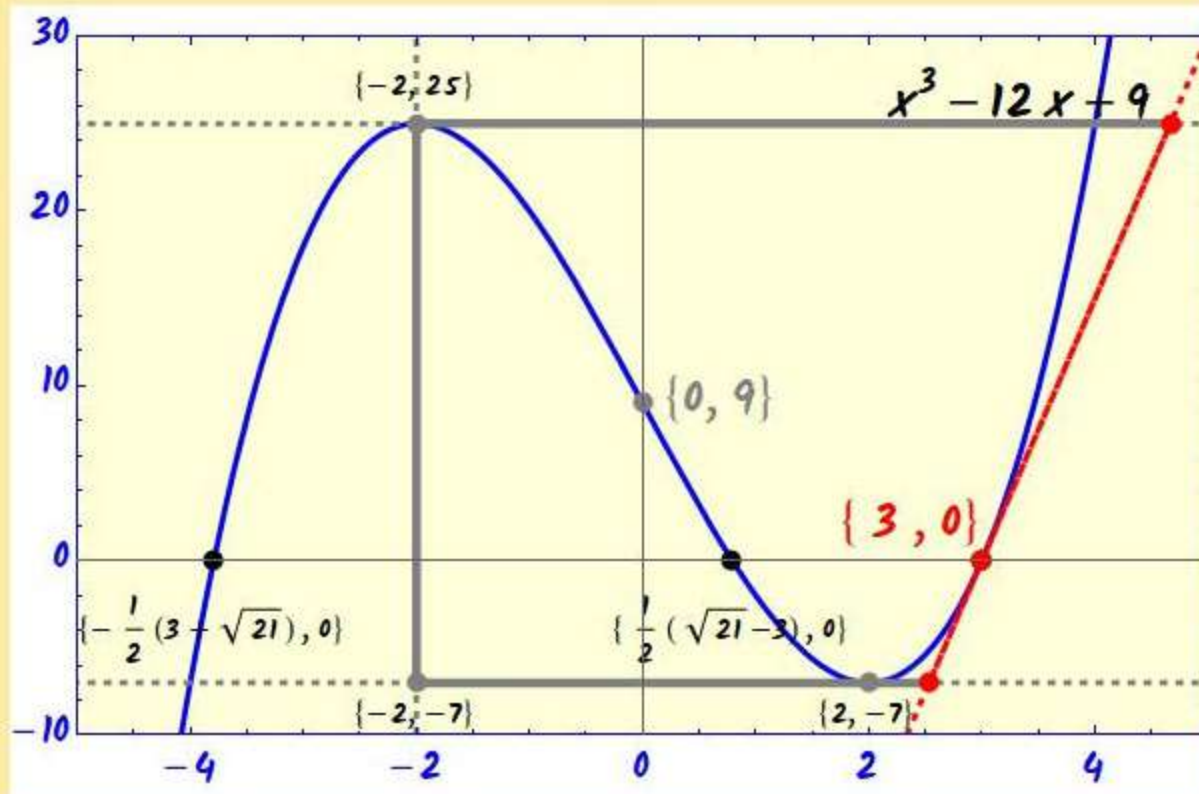




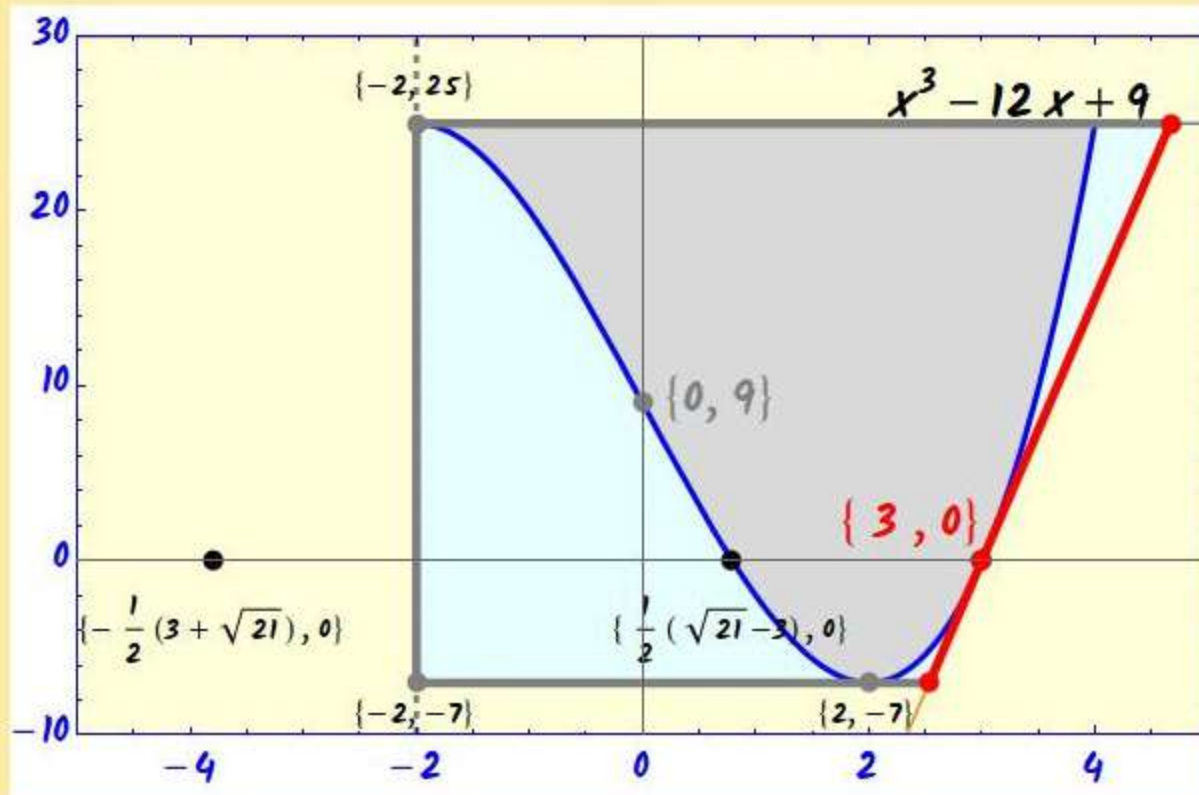


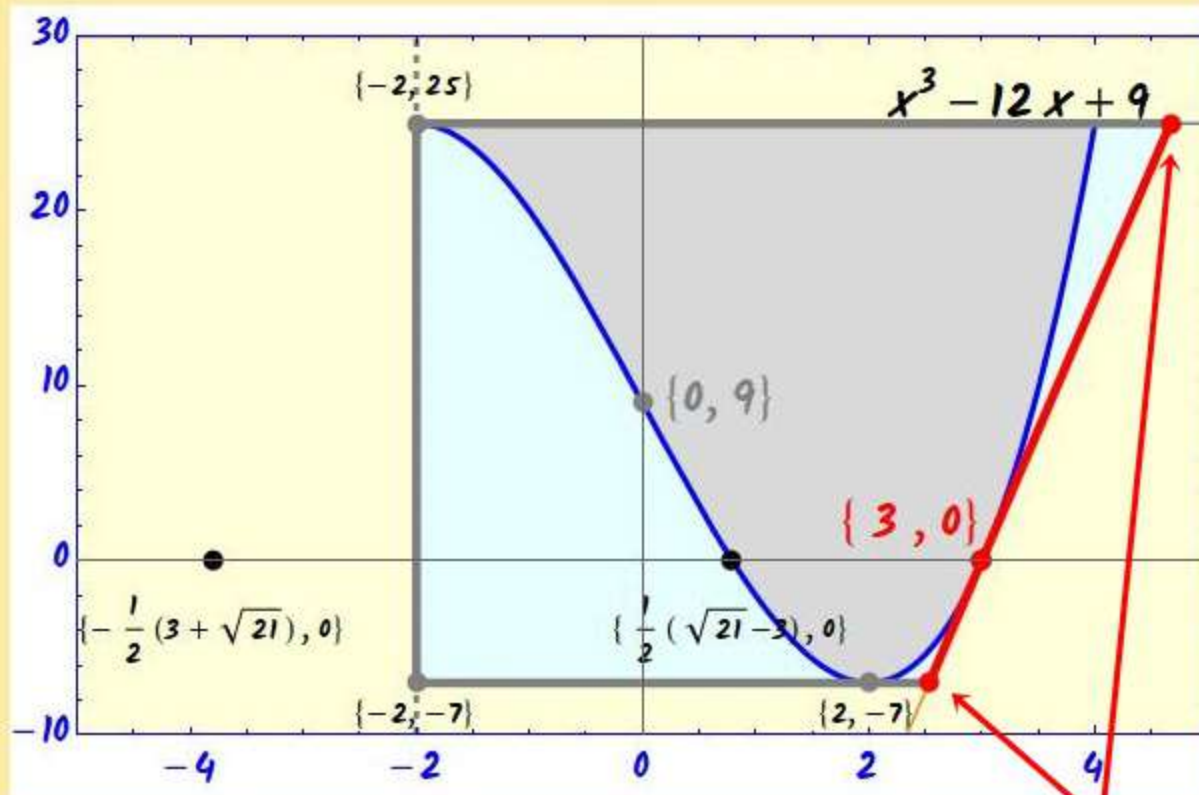






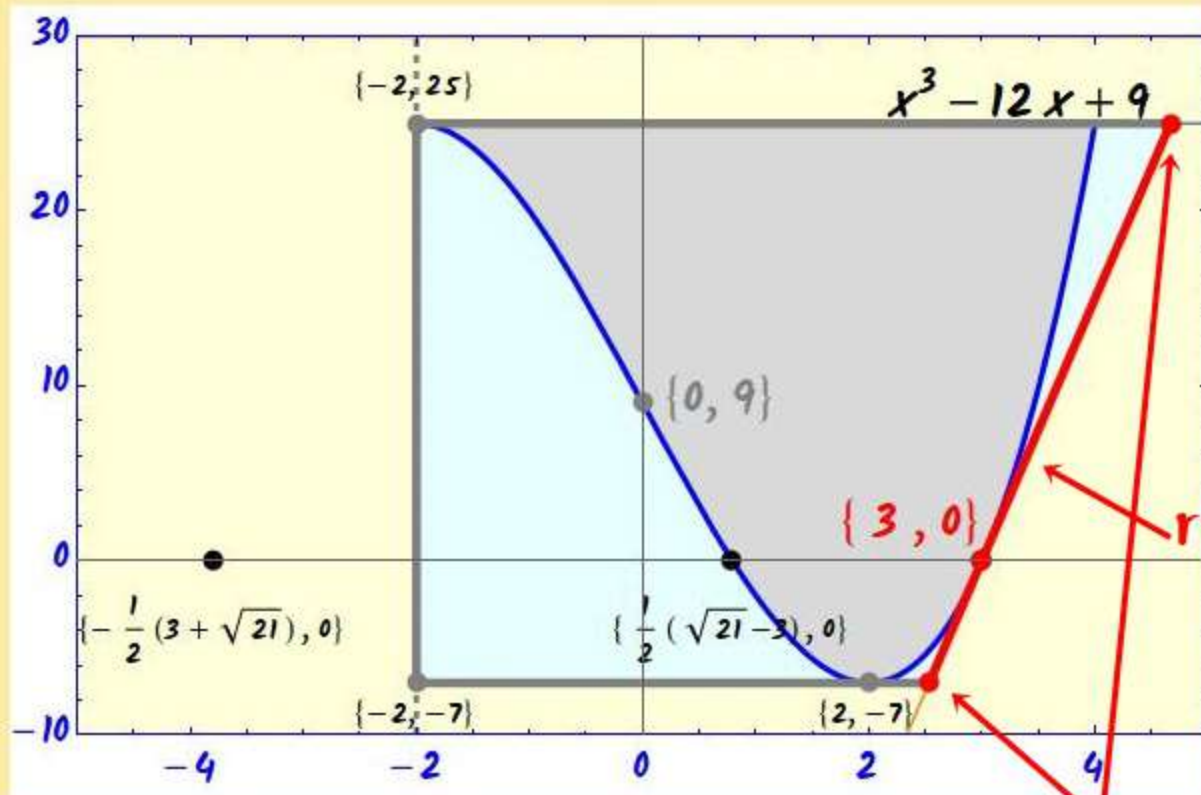




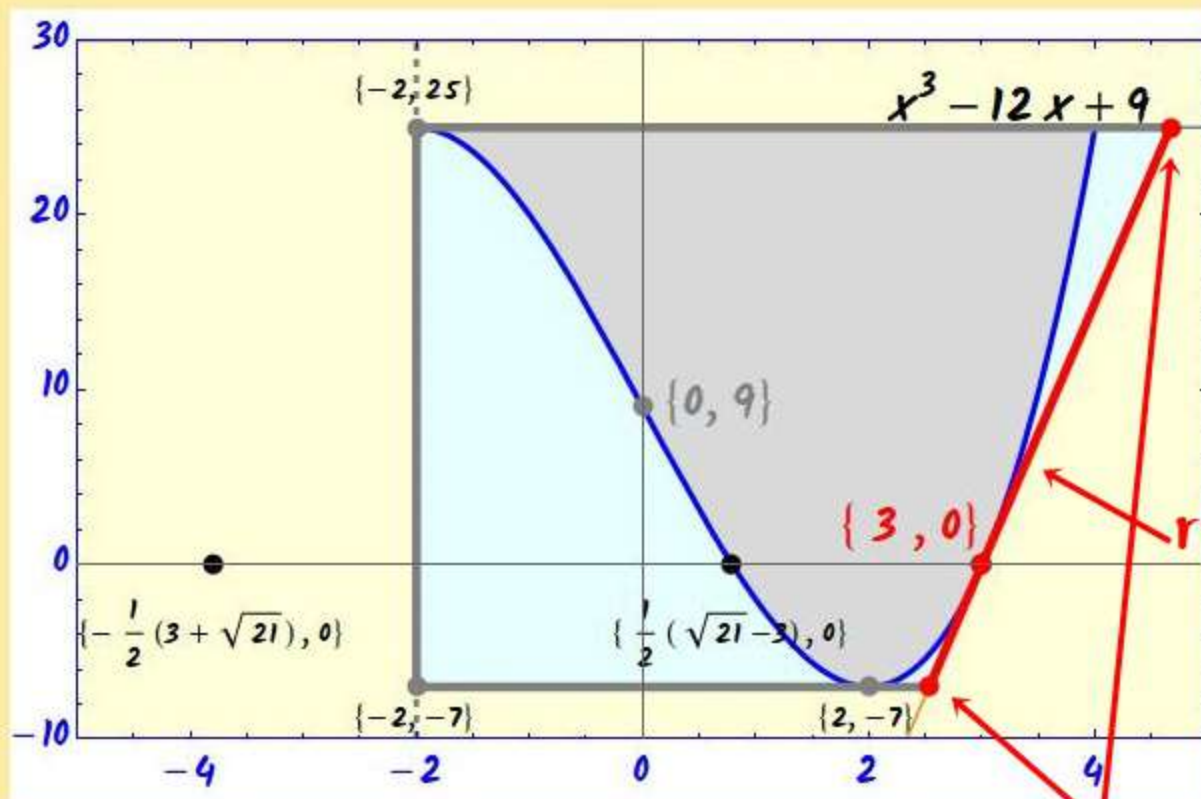


pontos ?





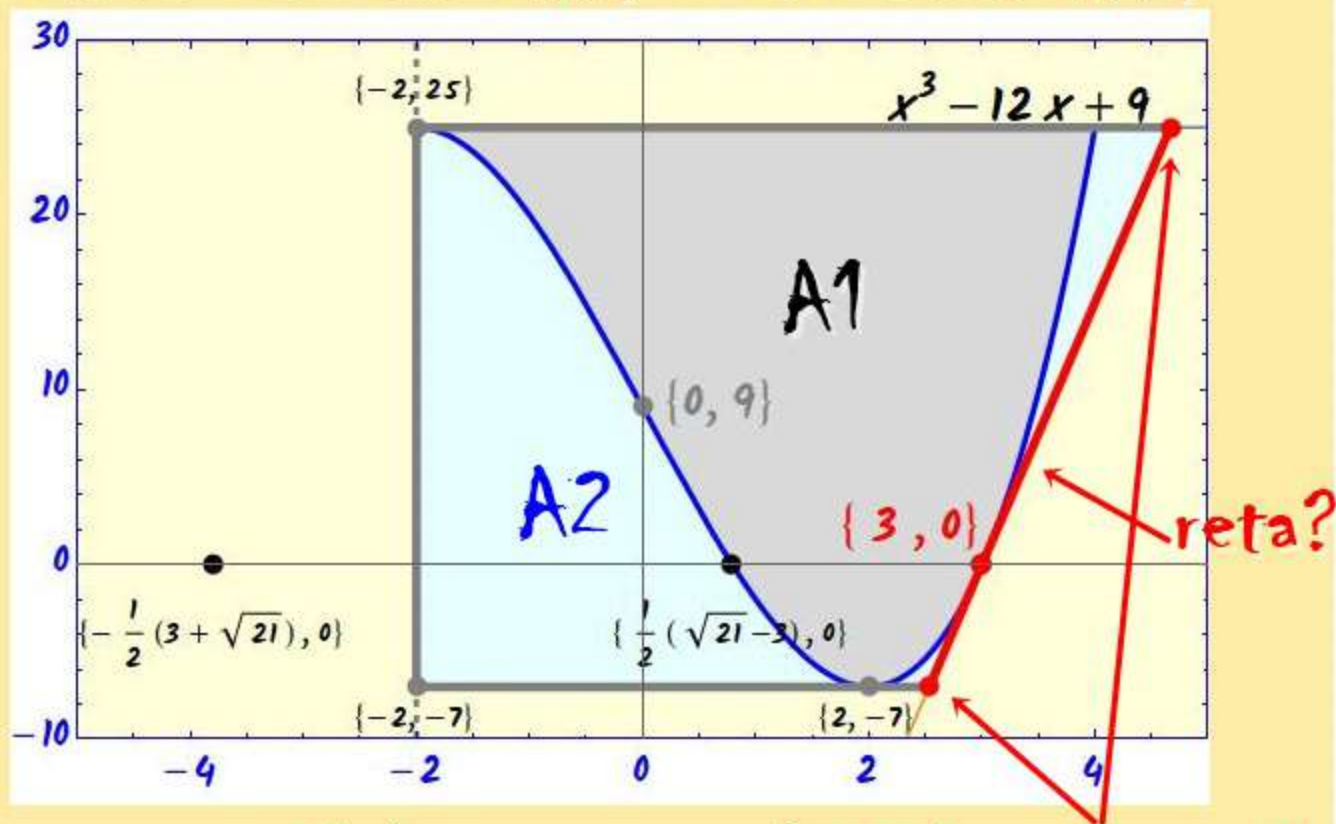
reta?  
pontos ?



tangente a  $f(x)$  no ponto  $(3, 0)$  pontos ?



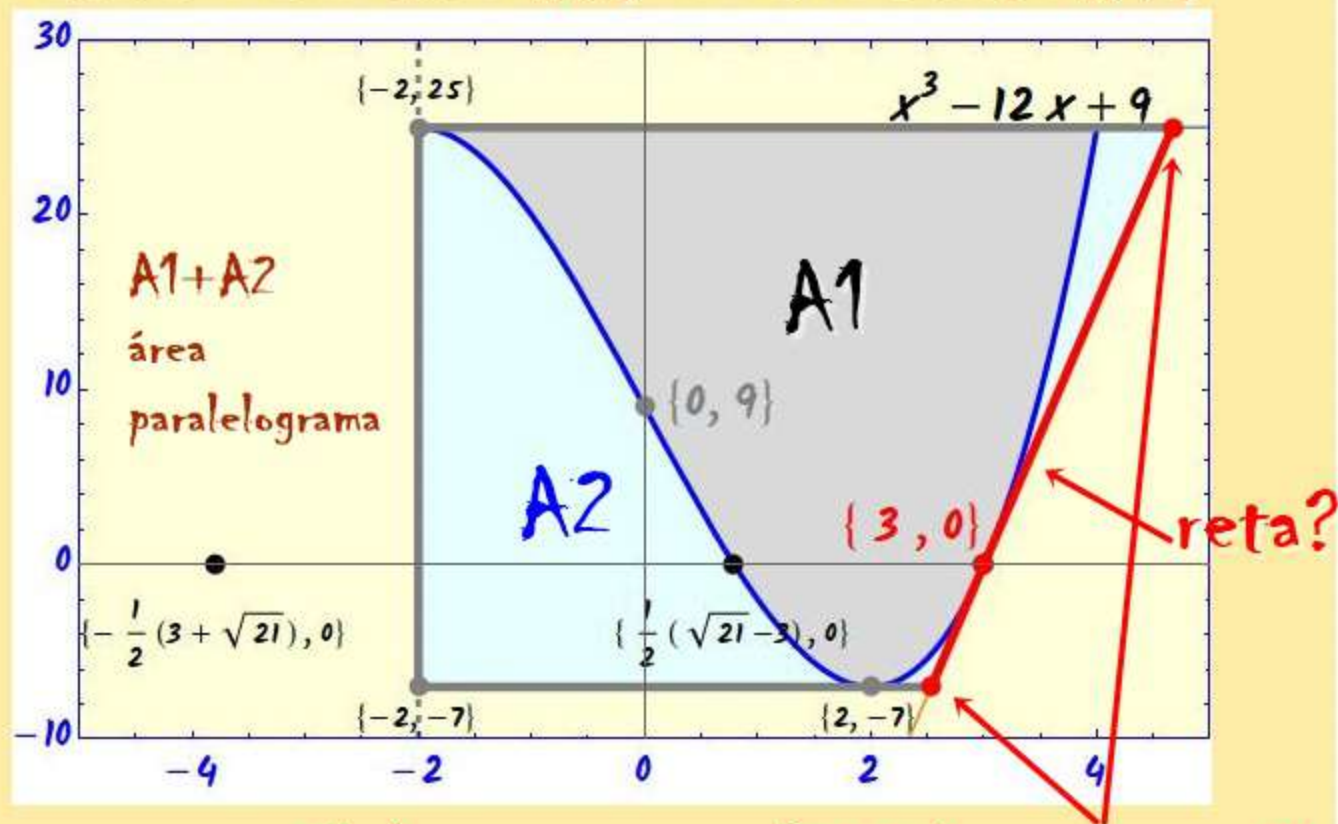
Calcular a área cinza (A1) e a área celeste (A2)



tangente a  $f(x)$  no ponto  $(3, 0)$  pontos ?



Calcular a área cinza (A1) e a área celeste (A2)



tangente a  $f(x)$  no ponto  $(3, 0)$  pontos ?