

$$10 d) y = 3x - \frac{1}{2}x^2 + 1$$

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

Puntos de corte con ejes coordenados

$$x=0 \rightarrow y=1 \rightarrow (0,1)$$

$$y=0 \rightarrow -\frac{1}{2}x^2 + 3x + 1 = 0 \rightarrow -x^2 + 6x + 2 = 0$$

$$x = \frac{-6 \pm \sqrt{6^2 - 4 \cdot (-1) \cdot 2}}{2 \cdot (-1)} = \frac{-6 \pm 2\sqrt{11}}{-2} = 3 \pm \sqrt{11}$$

$3 + \sqrt{11} \approx 6'32$   
 $3 - \sqrt{11} \approx -0'32$

$$(3 - \sqrt{11}, 0) \text{ y } (3 + \sqrt{11}, 0)$$

$$\approx (-0'32, 0) \text{ y } (6'32, 0)$$

Vértice

$$x = \frac{-b}{2a} = \frac{-3}{2(-\frac{1}{2})} = 3 \rightarrow y = -\frac{1}{2}3^2 + 3 \cdot 3 + 1 = \frac{11}{2} = 5'5$$

$$(3, 5'5)$$

