Representación parábolas (ii)

viernes, 17 de abril de 2020 12:54

Función polinómica de grado 2

A cada **x** le corresponde un y = **f(x)**
f(x) es un polinomio de grado 2

$f(x) = ax^2 + bx + c$

PLANO $\mathbb{R}^2$

(1, 4)
(2, 9)
(-3, 4)
(5, 36)
(0, 1)

x	f(x) = x² + 2x+ 1
1	4
2	9
-3	4
5	36
0	1
6	

X = 1

$f(x) = x^2 + 2x + 1$
NO A Q

↳ $f(1) = 4$

$f(-3) = (-3)^2 + 2(-3) + 1 = 9 - 6 + 1 = 4$

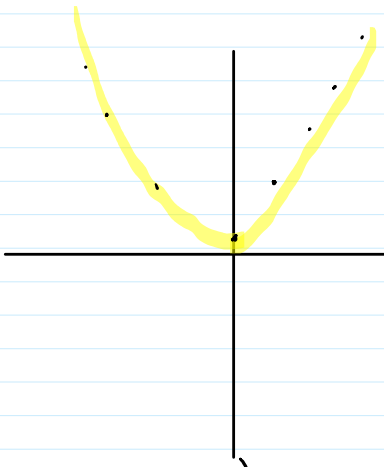
$f(5) = 5^2 + 2 \cdot 5 + 1 = 36$

$f(0) = 0^2 + 2 \cdot 0 + 1 = 1$

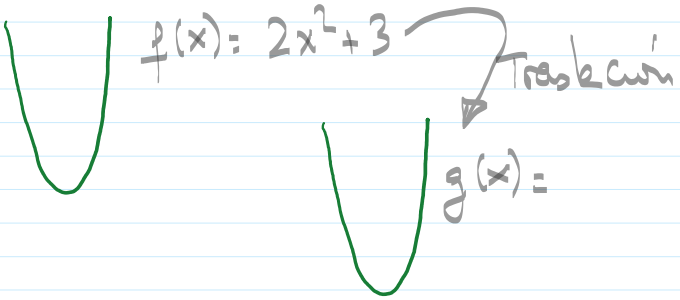
NO ACABA

PUNTOS DEL PLANO

(1



MÉTODO → representar las parábolas



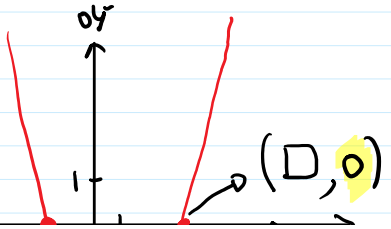
REPRESENTAR

$f(x): x^2 + 2x + 1 = (x+1)^2$

1) CORTE EJE OX

En los que $f(x) = 0$

$x^2 + 2x + 1 = 0$

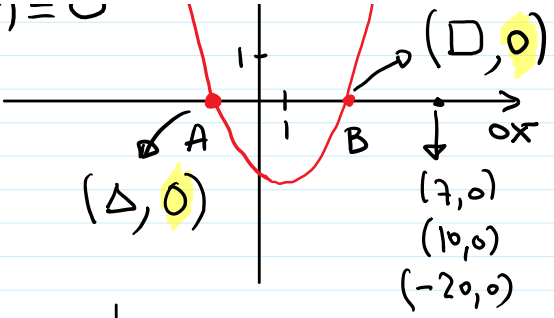


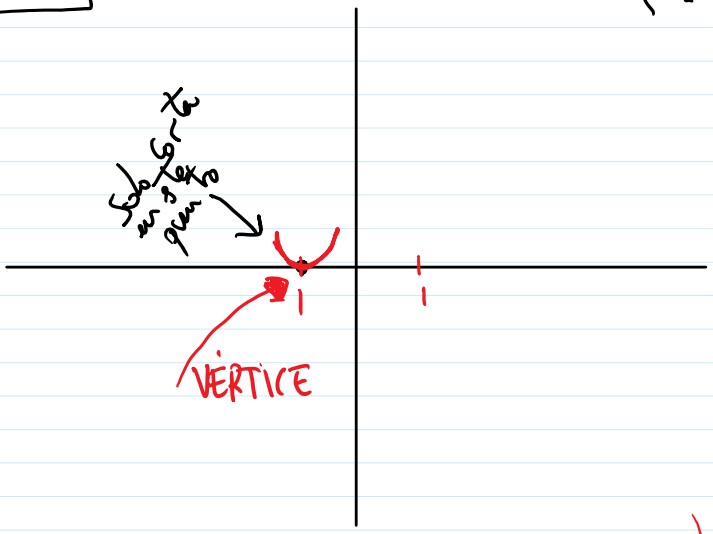
En los que $f(x)=0$

$x^2+2x+1=0$

$x=-1$

$x=-1$ DOBLE



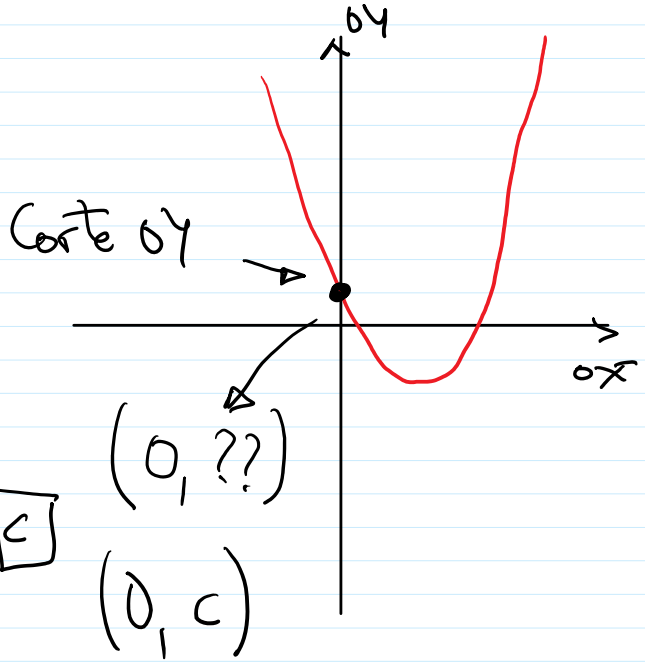


2) CORTE OY

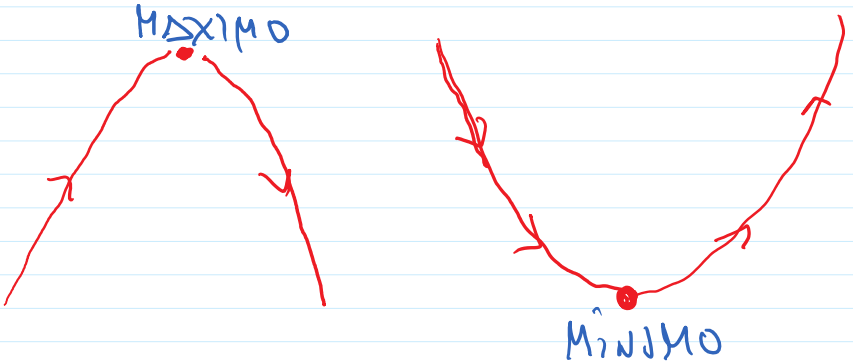
$(0, f(0)) = (0, 1)$

$f(x) = ax^2+bx+c$

$f(0) = a\cdot 0+b\cdot 0+c = \boxed{c}$



3) VÉRTICE.



$(V_x, V_y) = (-1, 0)$

$V_x = \frac{-b}{2a} = -\frac{2}{2\cdot 1} = \frac{-1}{1}$

$f(x) = x^2+2x+1$

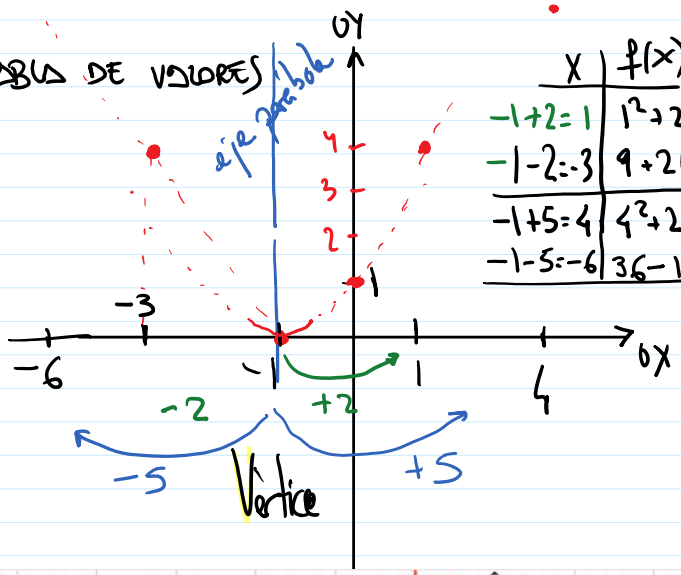
$V_x = \frac{-b}{2a} = -\frac{2}{2\cdot 1} = -1$

$f(x) = x^2 + 2x + 1$

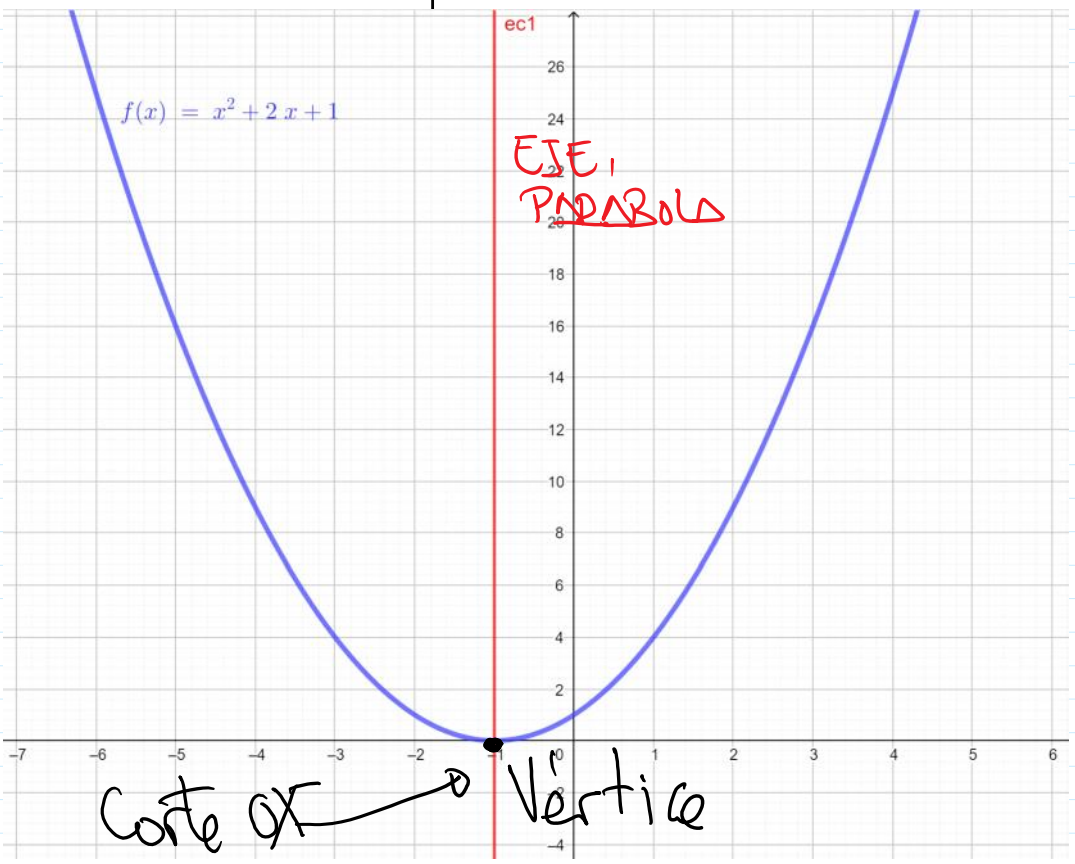
$a=1 \quad b=2 \quad c=1$

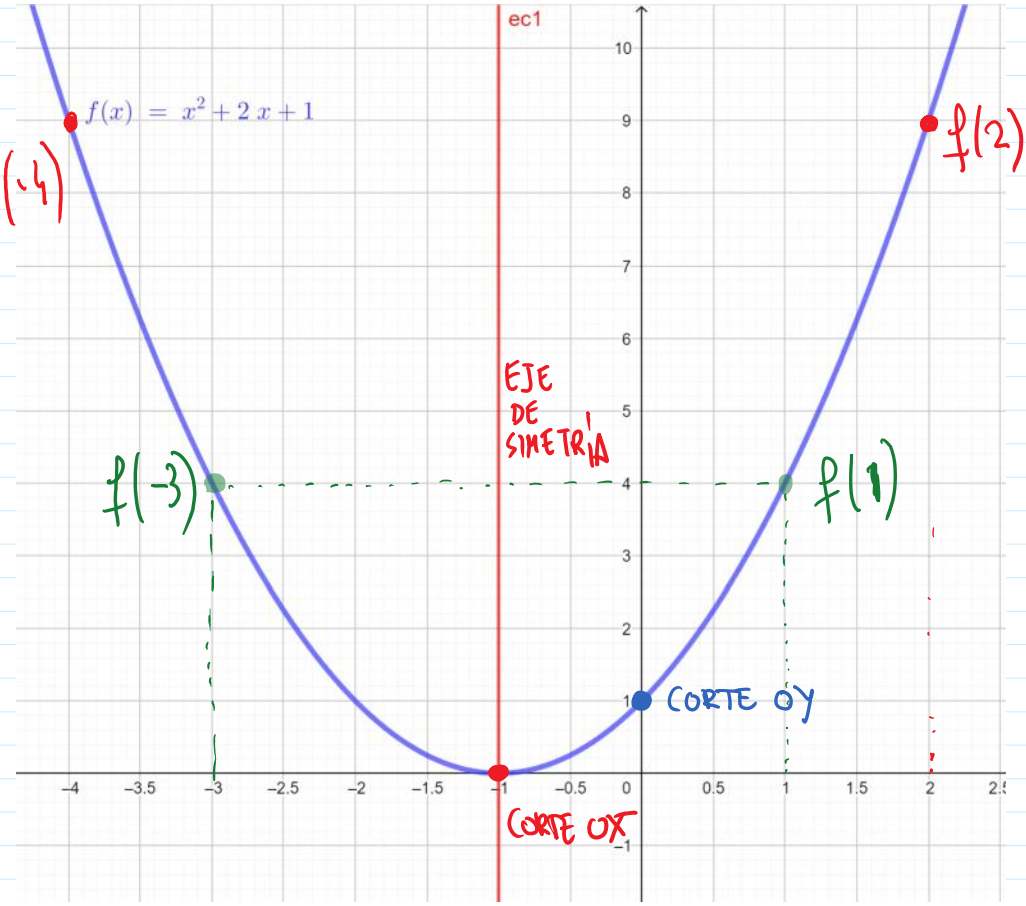
$V_y = (-1)^2 + 2(-1) + 1 = 0$

4) TABLA DE VALORES



X	f(x)
$-1+2=1$	$1^2+2\cdot 1+1=4$
$-1-2=-3$	$9+2(-3)+1=4$
$-1+5=4$	$4^2+2\cdot 4+1=25$
$-1-5=-6$	$36-12+1=25$





OBSERVA LA SIMETRÍA !!