

WARMUP

Given $y = x^2 - 6x + 8$

a) Let $y = 0$ and solve using ZPP
 $(x-2)(x-4) = 0$ $x=2, x=4$

$$\begin{array}{r} 8 \\ -4 \quad -2 \\ \hline -6 \end{array}$$

b) Identify the x-intercepts
 $(2,0)(4,0)$

c) Find the axis of symmetry

$$x = \frac{-(-6)}{2 \cdot 1} = \frac{6}{2} = 3 \quad x=3$$

d) Find the vertex

$$y = 3^2 - 6 \cdot 3 + 8 = 9 - 18 + 8 = -1$$

e) Find the y-intercept
 $(0, 8)$

$$(3, -1)$$

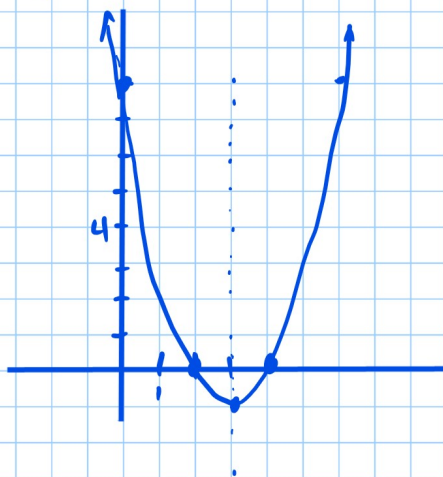
f) Determine whether the graph opens up or down

g) Graph it

h) Max or min

i) Domain = $(-\infty, \infty)$

h) Range = $[-1, \infty)$



$$(-1) \left(-x^2 + 8x - 15 = 0 \right)$$

$$x^2 - 8x + 15 = 0$$

$$(x-3)(x-5) = 0$$

$$-(x^2 + 2x - 3)$$
$$-(x-1)(x+3)$$

-3 and 1

$$-(x^2 + 2x - 3)$$

$$-(x+3)(x-1)$$

-3 and 1

$$(-x+1)(x+3)$$

$$-x^2 - 4x - 3$$

$$-(x^2 - 8x + 15)$$

$$-(x-3)(x-5)$$

$x = -1$ axis

$$y = -(-1)^2 - 2(-1) + 3$$

$$y = -1 + 2 + 3 = 4$$