

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

$$f(x) = a(x-h)^2 + k$$

GOAL: Rewrite standard form into vertex form

Graphing Quadratics

NAME: _____

NAME: _____

ROUND ROBIN (A)

NAME: _____

NAME: _____

FUNCTION: $f(x) = 3x^2 - 12x - 1$

CONVERT TO VERTEX FORM

$$f(x) = 3(x^2 - 4x + 4) - 1 - 12$$

$(\frac{-4}{2})^2 = (-2)^2 = 4$

$$f(x) = 3(x-2)^2 - 13$$

VERTEX: (2, -13)

SOLVE FOR X-INTERCEPT(S)

$$3(x-2)^2 - 13 = 0$$

$$3(x-2)^2 = 13$$

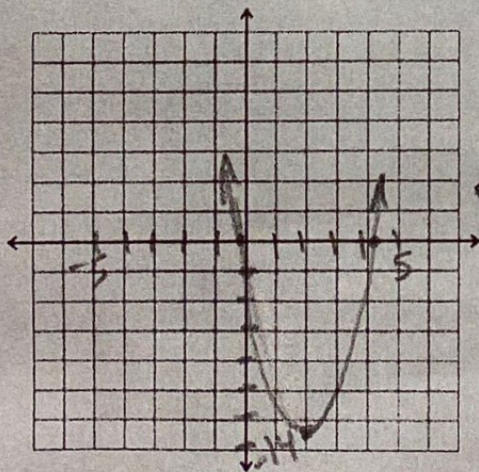
$$(x-2)^2 = \frac{13}{3}$$

$$x-2 = \pm \sqrt{\frac{13}{3}} = \pm 2.08$$

$$x = 2 \pm 2.08$$

X-INT(S): (4.08, 0) (-0.08, 0)

GRAPH



FIND THE Y-INTERCEPT

$$\text{set } x=0$$

$$3 \cdot 0^2 - 12 \cdot 0 - 1$$

$$0 - 0 - 1 = -1$$

Y-INTERCEPT: (0, -1)

ANALYZE:

(A) WHAT IS/ARE THE TRANSFORMATION FROM THE PARENT FUNCTION $y = x^2$?

(B) WHAT IS THE DOMAIN?

(C) WHAT IS THE RANGE?