

STANDARD FORM

$$ax^2 + \underline{bx} + c$$

Quadratic

a:
+a $\uparrow\uparrow$, MIN
-a $\downarrow\downarrow$, MAX

c:
+c Shift UP
-c Shift DOWN

EX. GIVEN EQUATION, STATE BASIC INFO.

1. $y = -x^2 + 2.$

a : down
↪ MAX
UP 2

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

$a > 0$ ⇒ min
 $a(bx-h)^2 + k$

STANDARD FORM

$$ax^2 + \underline{bx} + c$$

AXIS OF SYMMETRY

$$X = \frac{\overset{-(-b)}{-b}}{2a} \text{ or } \frac{\text{opp. } b}{2a}$$

EX. STATE THE AXIS OF SYMMETRY

1. $y = -2x^2 + 16x - 28$

$x = \frac{-b}{2a}$ $b = 16$ $a = -2$

$\frac{-16}{2 \cdot -2} = \frac{-16}{-4} = 4$

$x = 4$

2. $y = -x^2 + 2$

$x = \frac{-b}{2a}$ $b = 0$ $a = -1$

$= \frac{0}{2 \cdot -1} = \frac{0}{-2} = 0$

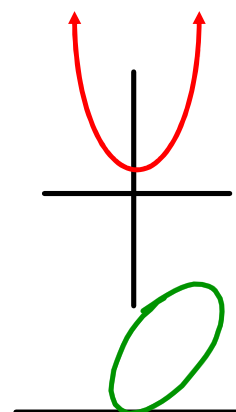
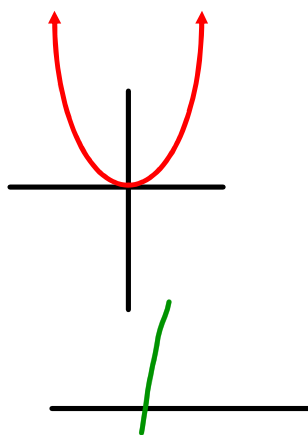
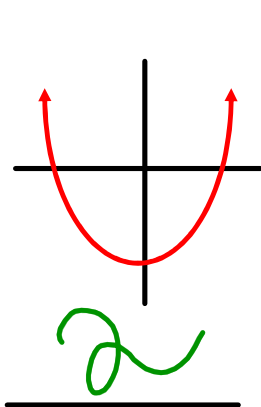
$x = 0$

QUADRATICS: ZEROS

POINTS WHERE QUADRATICS CROSS X-AXIS

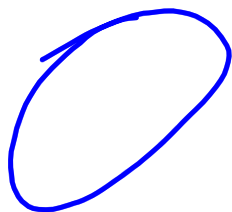
Solutions, Roots, x-int

CAN ONLY OCCUR THESE THREE WAYS



EX. STATE THE AMOUNT OF ZEROS

1. $y = -x^2 - 2$



2. $y = 4x^2$

