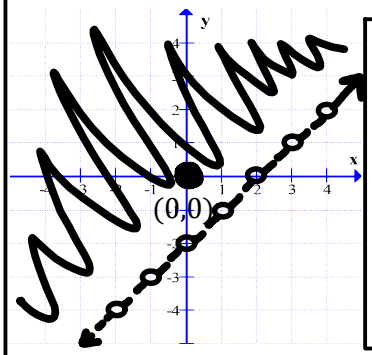
# C11 - 9.0 - Inequalities Review

One Variable | Two Variables

$y > x - 2$ $\quad y = mx + b$



**Find Equation**

**Test Point**

| $y$ | $x - 2$ |
|---|---|
| $0$ | $0 - 2$ |
| $0$ | $-2$ |
| $0 > -2$ ✓ | |

$y > x - 2$

Correct Statement

**Test Point** $(x, y)$ $(0,0)$

Choose a Point on either side of the Line

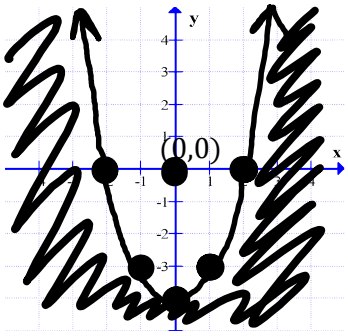
Zero-Zero Test*

$y > x - 2$
$0 > 0 - 2$
$0 > -2$ ✓

Substitute for $x$ and $y$.

Correct: Shade the $(0,0)$ side of the line.

$y \leq x^2 - 4$



**Test Point** $(0,0)$

$y \leq x - 2$
$0 \leq 0 - 2$
$0 \leq -2$ ✗

Incorrect: Shade the "NOT" (0,0) side of the line.

**Vertex Form**

$(x, y)$ Vertex $(0, -4)$ $\quad (x, y)$ Point $(1, -3)$

**Find Equation**

$y = a(x - p)^2 + q$
$y = a(x - 0)^2 - 4$
$-3 = a(1 - 0)^2 - 4$
$-3 = 1a - 4$
$1 = a$
$y = 1(x - 0)^2 - 4$
$y = x^2 - 4$

| $y$ | $x^2 - 4$ |
|---|---|
| $0$ | $0^2 - 4$ |
| $0 \leq -4$ ✗ | |

$y \leq x^2 - 4$

Incorrect Statement

Solve

$x - 2 \leq 0$
$+2 \quad +2$
$x \leq 2$

Factor!

$(x - 4)(x - 1) > 0$

$x - intercept's$

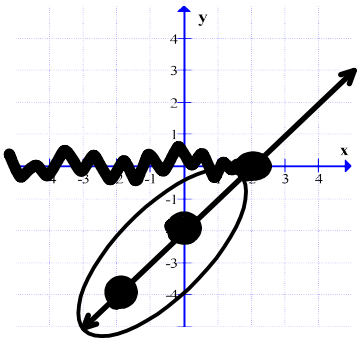
$x - 4 = 0 \quad x - 1 = 0$
$x = 4 \quad x = 1$

$(x + 2)(x - 2) \leq 0$

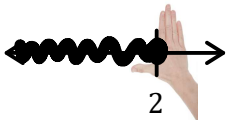
$x + 2 = 0 \quad x - 2 = 0$
$x = -2 \quad x = 2$

**Graphing**

$y = x - 2$

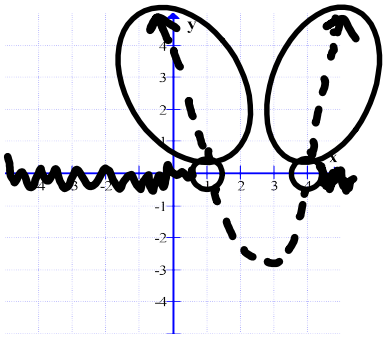


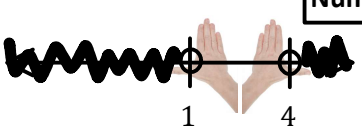
**Number Line**



2

$y = (x - 4)(x - 1)$

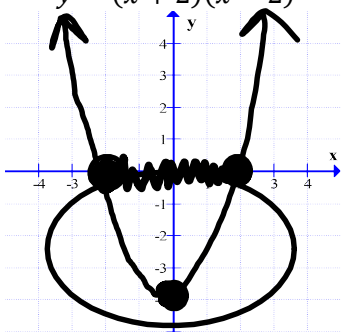




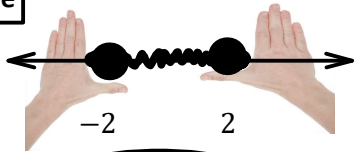
1 4

$x < 1 \quad x > 4$

$y = (x + 2)(x - 2)$



**Number Line**



$-2 \quad 2$

$-2 \leq x \leq 2$