

Unit 7 REVIEW

1. Graph:

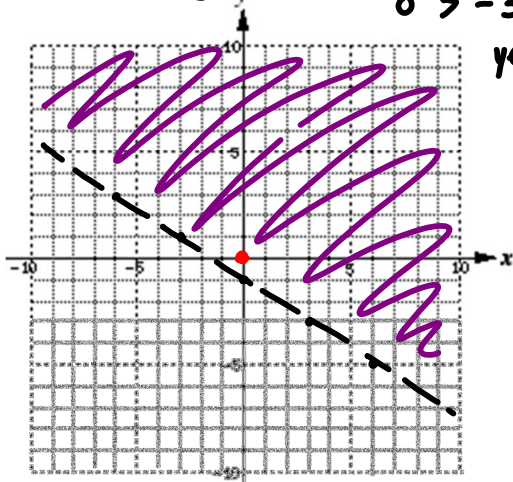
a) $2x + 3y > -3$

$$y = -\frac{2}{3}x - 1$$

test (0,0)

$$0 > -3$$

yes!



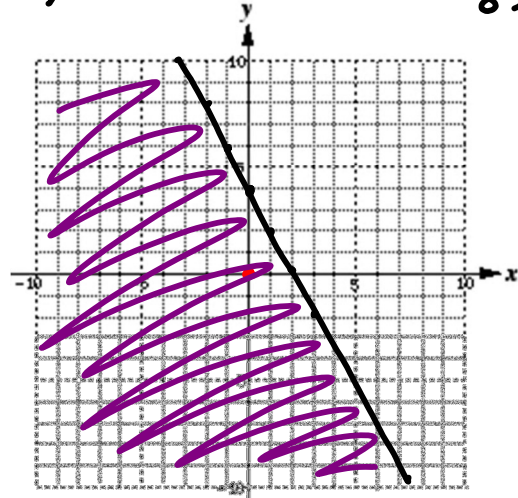
b) $-4x - 2y + 8 \geq 0$

$$y = -2x + 4$$

test (0,0)

$$8 \geq 0$$

✓



2. Solve $x^2 - 2x - 3 < 0$:

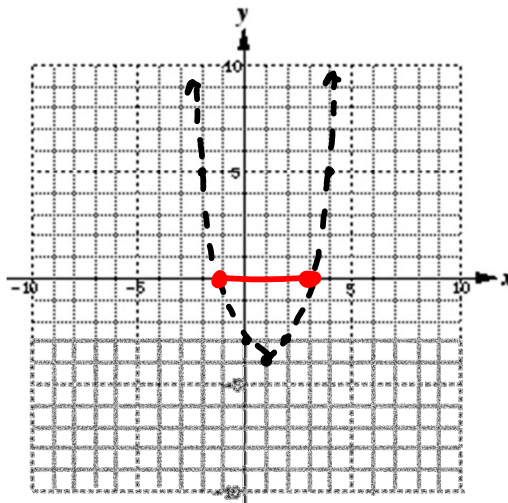
a) Graphically

$$y = x^2 - 2x - 3$$

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

$$p = \frac{-2}{-2(1)} = 1$$

$$q = -3 - (1)(1)^2 = -4$$



$$-1 < x < 3$$

ⓑ $-1 < x < 3$

$$x = 0$$

$$-3 < 0$$

yes!

b) Algebraically

$$x^2 - 2x - 3 = 0$$

$$(x-3)(x+1) = 0$$

$$x = 3 \quad x = -1$$

Ⓐ $x < -1$

$$x = -2$$

$$(-2)^2 - 2(-2) - 3 < 0$$

$$4 + 4 - 3 < 0$$

No!

Ⓒ $x > 3$

$$x = 4$$

$$(4)^2 - 2(4) - 3 < 0$$

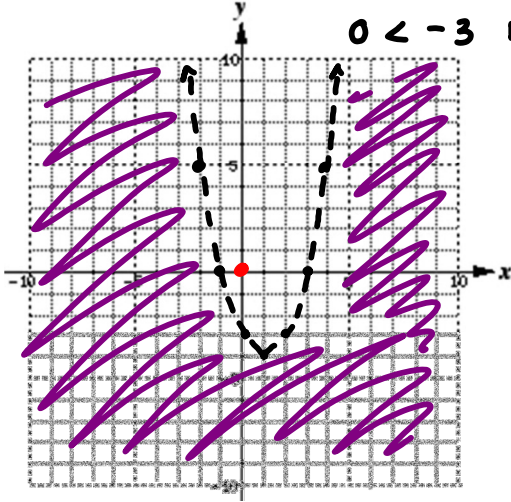
$$16 - 8 - 3 < 0$$

$$5 < 0$$

No!

3. Graph:

a) $y < x^2 - 2x - 3$ → $y = (x-3)(x+1)$
test (0,0)
 $0 < -3$ No!



b) $y \geq -2(x-2)^2 + 3$ **test (0,0)**
 $0 \geq -2(-2)^2 + 3$
 $0 \geq -5$ yes!

