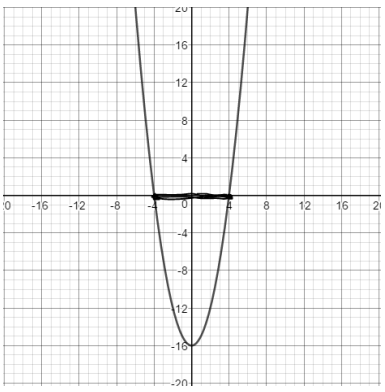
Secondary Math III
Quadratic Inequalities
Assignment 2.6

Name_____
Period_____

Given the following inequalities explain if the given solution is true or false.

1. $f(x) = x^2 - 16,\ f(x) \leq 0$



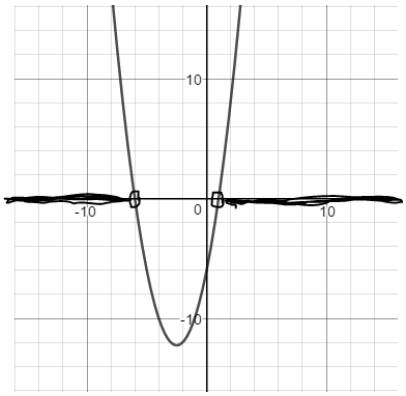
Solution: $-4 \leq x \leq 4$

True or False? _____

Why?_____

_____

2. $g(x) = x^2 + 5x - 6,\ g(x) > 0$



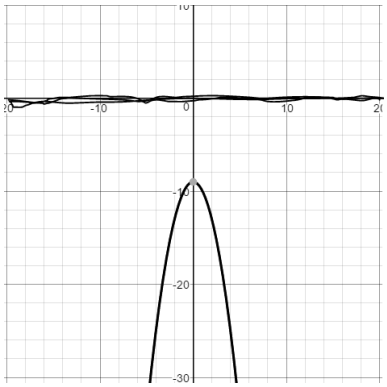
Solution: $x < -6,$ or $x > 1$

True or False? _____

Why?_____

_____

3. $h(x) = -x^2 - 9,\ h(x) > 0$



Solution: All Real Numbers

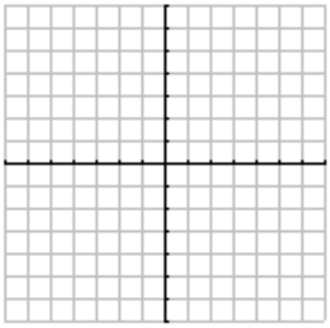
True or False? _____

Why?_____

_____

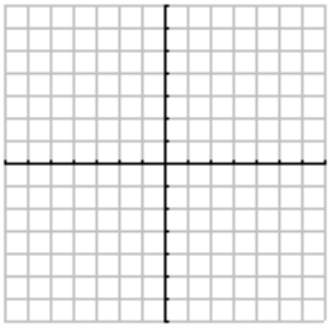
Solve the following quadratic inequalities. Give your solution in inequality form or interval notation. Sketch a graph to justify your answers. Be sure to check your solution!

4. $-x^2 + 7x > -8$



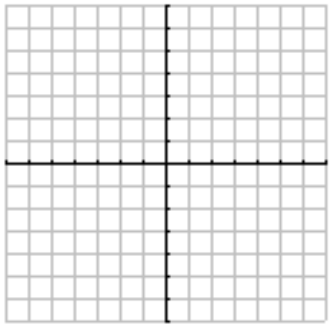
Solution: _____

5. $(x + 4)(x - 3) \leq -7x - 27$



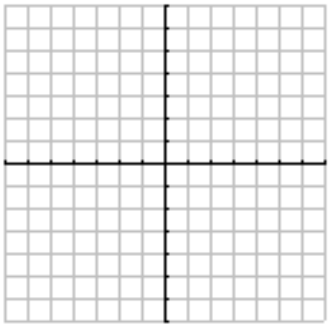
Solution: _____

6. $-x^2 < 36$



Solution: _____

7. $x^2 + 144 > 0$



Solution: _____

8. Bobby is throwing a ball directly upward into the air while laying down in his back yard, modeled by the following equation: $b(x) = -t^2 + 6t$. Where b represents the height of the ball in feet and t represents the time in seconds. Bobby's neighbor, Jeremy, is standing in the backyard next to Bobby's. Jeremy can see the ball only when it goes above the fence between their two yards. If the fence is 5 feet tall, at what time(s) can Jeremy see the ball?