Quadratic Inequalities & Word Problems Worksheet

1. Solve \( y > x^2 - 4x + 3 \).

2. Solve \( y \leq 3x^2 + 4x - 4 \).

3. Solve \( x^2 - 5x - 14 \leq 0 \).

4. Solve \( 2x^2 - 7x + 3 < 0 \).

5. An object is launched at 19.6 meters per second from a 58.8-meter tall platform. The equation for the object’s height at time \( t \) seconds after launch is \( s(t) = -4.9t^2 + 19.6t + 58.8 \), where \( s \) is in meters. When does the object hit the ground?
6. An object is launched directly upward at 64 feet per second from a platform 80 feet high. The equation for the object’s height is \( h(t) = -16t^2 + 64t + 80 \).

   a) At how many seconds will the object have a height of 90 feet?

   b) There are 2 answers. Why?

7. An object is launched from ground level directly upward at a rate of 48 meters per second. The equation for the object’s height is \( y = -16x^2 + 48x \).

   a) What values of \( x \) is the object at OR ABOVE a height of 32 meters?

   b) How long is the object at or above this height?

8. The area of a rectangle is 560 square inches. The length is 3 more than twice the width. Find the length and width of the rectangle. (Hint: draw a picture & set up a system of equations.)