

Name: _____
Date Started: _____ Date Completed: _____ Score: _____

Learning Activity Sheet
Solving Problems Involving Quadratic Inequalities

Solve the following word problems.

1. The operating cost of a company can be approximately modeled as $C(x) = 17 - 8x - 2x^2$, where x is the time in years, given that its revenue function is $R(x) = 5 - 3x$, find the number of years during which the company is not making a profit.

2. A rectangular lot has a length that is two more than its width. Determine the possible values of the width to ensure that the area of the lot is at least 80 square meters and at most 120 square meters.

3. Find the range of values of s for which s is a positive integer such that the area of a rectangle whose dimension is $s + 3$ by $2s$ will ensure an area of at least 8 square units.

4. Find the largest integer value of k for which $-7x^2 + 9x + k$ is always negative for all real values of x .

5. A projectile is fired straight up from the ground with an initial velocity of 80 feet per second. Its height $s(t)$ in feet at any time t is given by the function $s(t) = -16t^2 + 80t$. Find the interval of time for which the height is greater than 96 feet.