

Algebra I

8.4-8.6 Quiz Review

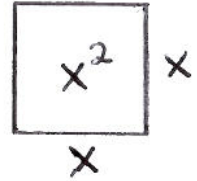
Analyzing and Solving Quadratic Functions

NAME: _____

DATE: _____ HOUR: _____

Part I. Area

1. If the side length of a square is 4 feet, the area of the square is _____ square feet.
2. If the side length of a square is 9 feet, the area of the square is _____ square feet.
3. If the area of a square is 4 square feet, the length of one side is _____ feet.
4. If the area of a square is 100 square feet, the length of one side is _____ feet.



Part II. Solving $x^2 = b$ Quadratic Equations

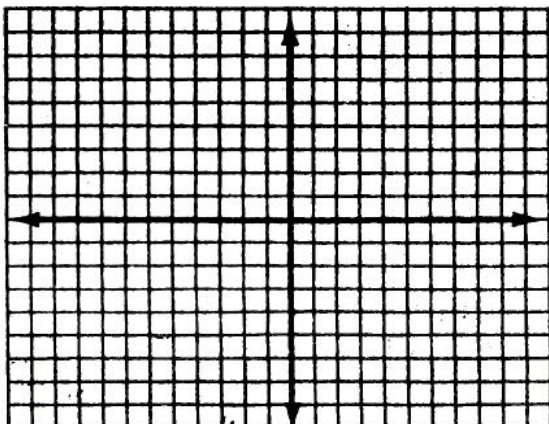
Transform each equation into $x^2 = b$ then solve. Do NOT use the Quadratic Formula.

1. $x^2 - 1 = 8$
2. $3x^2 - 2 = 298$
3. $x^2 + 7 = 23$
4. $-2x^2 + 1 = -17$

Part III. Analyzing Factored Quadratics

Find the x- and y-intercepts for the quadratic from its equation then **sketch** using the intercepts and symmetry. Identify the **vertex coordinates** and the **line of symmetry**.

$y = 2(x - 1)(x + 3)$ x-intercepts: $x = \underline{\hspace{1cm}}$, $x = \underline{\hspace{1cm}}$ y-intercept: $y = \underline{\hspace{1cm}}$



vertex (,)

line of symmetry $x = \underline{\hspace{1cm}}$

Part IV. Analyzing Discriminants

1. If a quadratic has a discriminant $(b^2 - 4ac)$ that is **positive**, there will be ____ solution(s).
2. If a quadratic has a discriminant $(b^2 - 4ac)$ that is **negative**, there will be ____ solution(s).
3. If a quadratic has a discriminant $(b^2 - 4ac)$ that is **zero**, there will be ____ solution(s).

Part V. Solve using the Quadratic Formula. Show all your work.

1. $-3x^2 + 4x - 8 = 0$

a = b = c =

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

a = b = c =

3. $x^2 + 4x = -4$

a = b = c =

Part VI. Analyzing a Quadratic Function

Here is a graph of a papaya being blasted out of a cannon.

How long was the papaya in the air? ____ seconds

How high was the papaya blasted? _____ feet

What is the **domain** of the papaya? ____ $\leq x \leq$ ____

What is the **range** of the papaya? ____ $\leq y \leq$ ____

What is the first x-intercept? $x =$ ____
 What does it mean in the problem situation?

What is the second x-intercept? $x =$ ____
 What does it mean in the problem situation?

