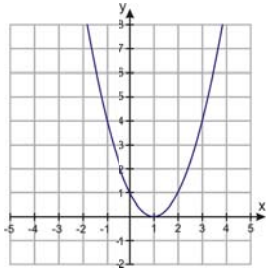
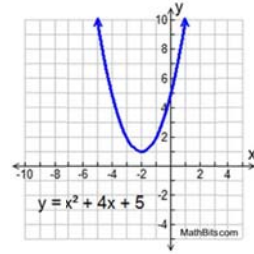


Do Now:



- a) Identify the roots:
- b) Describe the nature of the roots:



- (a) Identify the roots:
- (b) Describe the nature of the roots:

AIM: SOLVING WORD PROBLEMS USING QUADRATIC EQUATIONS (Day 2)

- 1. The length of a rectangle is 5 more than the width. If the area of the rectangle is 150, what are the dimensions of the rectangle?

- Step 1: Write a legend from the question.
- Step 2: Write area formula.
- Step 3: Substitute in terms of “x” from your legend into the area formula.
- Step 4: Distribute.
- Step 5: Quadratic Equation must be in standard form. Set equation equal to zero.
- Step 6: Factor
- Step 7: T-Bar
- Step 8: Decide whether to reject a solution.
- Step 9: Plug solution into legend
- Step 10: Check

2. The width of a rectangle is 4 feet less than the length. If the area of the rectangle is 32 square feet, find the width of the rectangle.

Step 1: Write a legend from the question.

Step 2: Write area formula.

Step 3: Substitute in terms of "x" from your legend into the area formula.

Step 4: Distribute.

Step 5: Quadratic Equation must be in standard form. Set equation equal to zero.

Step 6: Factor

Step 7: T-Bar

Step 8: Decide whether to reject a solution.

Step 9: Plug solution into legend

Step 10: Check

3. The width of Danielle's rectangular notebook is 5 inches shorter than the length if the area of her notebook is 24 square inches, what is the length and width of her notebook?

Step 1: Write a legend from the question.

Step 2: Write area formula.

Step 3: Substitute in terms of "x" from your legend into the area formula.

Step 4: Distribute.

Step 5: Quadratic Equation must be in standard form. Set equation equal to zero.

Step 6: Factor

Step 7: T-Bar

Step 8: Decide whether to reject a solution.

Step 9: Plug solution into legend

Step 10: Check

4. Robby's poster project has a length that is 3 inches longer than its width. If the poster is 40 square inches, how long is the length and width?

Step 1: Write a legend from the question.

Step 2: Write area formula.

Step 3: Substitute in terms of "x" from your legend into the area formula.

Step 4: Distribute.

Step 5: Quadratic Equation must be in standard form. Set equation equal to zero.

Step 6: Factor

Step 7: T-Bar

Step 8: Decide whether to reject a solution.

Step 9: Plug solution into legend

Step 10: Check

Name _____

UNIT 8

Date _____

LESSON 13

HW# _____

1. The product of two consecutive integers is 56. What are integers?

2. Dan's homework is to determine the dimensions of his rectangular backyard. He knows that the length is 10 feet more than the width, and the total area is 144 square feet. Write an equation that Dan could use to solve this problem. Then find the dimensions, in feet, of his backyard.

Directions: For #'s 3-4, solve for the x intercepts, in simplest **radical form**, by **completing the square** and then using the same equation, solve by using the **quadratic formula**.

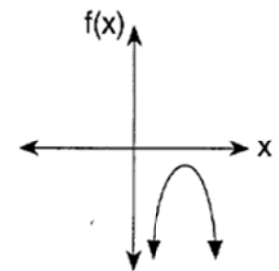
3. Completing the Square: $x^2 - 4x = 6$

4. Quadratic Formula: $x^2 - 4x = 6$

5. How many real solutions does the equation $3x^2 + 8x + 4 = 0$ have? Justify your answer.

6. The accompanying diagram shows a sketch of a quadratic function, $f(x)$. What is the nature of the roots of the quadratic equation $f(x) = 0$?

- 1) imaginary
- 2) real, rational, and equal
- 3) real, rational, and unequal
- 4) real, irrational, and unequal



7. How many real solutions does the equation $x^2 + 8x - 8 = 0$ have? Justify your answer.

8. The roots of the equation $x^2 + 4x + 2 = 0$ are

- 1) real, rational, and equal
- 2) real, rational, and unequal
- 3) real, irrational, and unequal
- 4) imaginary