

Pre-Algebra Activity 3:

Square Roots

Kim Holden

CALCULATORS: Casio: *fx-300ES* • Casio: *fx-115ES*

Teaching Notes/Lesson Plan Level: Pre-Algebra Middle School
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Objective

To familiarize students with the root and square root capabilities of the *fx-300ES*. The students will be able calculate the square roots of numbers and express the answers in standard and decimal forms.

Engage

Discuss with students where we see squares (numbers) in everyday life. Discuss how we can use squares and their importance in life around us.

Explore

1. Students will set the calculator to COMP mode.
2. Students will enter roots into the calculator.
3. Students will write answers in standard root form.
4. Students will write answers in decimal form.

Explain

Students should explain to the necessity of square roots in our everyday life. The discussion should include an explanation of when square roots are used.

Elaborate

Students can share ideas and explanations with the class as we find the dimensions of a square work space, and use the Pythagorean Theorem.

Evaluate

Give students additional examples to calculate.

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Student Worksheet Activity 3

Objectives

The student will be able to:

1. Enter information using the root key.
2. Find answer in standard root form.
3. Convert answer to decimal form.

Example

Ms. Brophy is creating a few cubicle workout rooms for her gym. One square workspace needs to have a floor space of 1352 square feet. Draw a diagram and describe/show she could find the length of each side of this room.

Procedure

1. Turn on calculator.
2. Set mode:
 - a. Press **MODE** key.
 - b. Press **1** for computation.
3. Press **square root** key.
4. Key in **1352**.
5. Press **=**.
6. Answer is given in standard form.
7. Press **S ↔ D** key to change answer from standard form to decimal form.

Student Worksheet Activity 3**Problems****Find each square root.**

1. $\sqrt{4}$

2. $\sqrt{64}$

3. $-\sqrt{25}$

4. $\sqrt{\frac{9}{16}}$

5. $\sqrt{225}$

**Find the best integer estimate for each square root.
Then check your answer using a calculator.**

6. $\sqrt{89}$

7. $-\sqrt{170}$

8. $\sqrt{625}$

9. $-\sqrt{97}$

10. $\sqrt{13.74}$

11. Miss Holden needs to fence in part of her yard for her dog, Corky. A diagram of the part of her yard that she wants to fence in is shown at the right. How much fencing must she purchase to surround the part of the yard she needs to fence in?

