

Math 9

Name: _____

1.1 – Square Roots of Perfect Squares

Date: _____

Pre-Requisites

A. **Simplifying Fractions** – Divide the numerator and denominator by the GCF.

Examples: $\frac{5}{10} =$

$$\frac{12}{60} =$$

$$\frac{28}{63} =$$

B. **Converting Fractions to Decimals** – Divide the numerator by the denominator.

Examples: $\frac{5}{10} =$

$$\frac{7}{12} =$$

C. **Converting Decimals to Fractions** – Re-write the decimal as a whole number over a power of 10 and reduce.

Examples: $0.1 =$

$$2.25 =$$

D. Terminating & Repeating Decimals

Examples of Terminating Decimals: $\frac{3}{4} =$

$$\frac{1}{8} =$$

Examples of Repeating Decimals: $\frac{2}{3} =$

$$\frac{1032}{990} =$$

Non-terminating and non-repeating: $\frac{5}{19} =$

Today's lesson...

1. How do we determine the area of a square given its side length? _____
2. How do we determine the side length of a square given its area? _____

Determine a Square given its Square Root

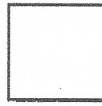
3. Find the area of a square with side length of:

a. 6 cm



Area =

b. $\frac{3}{2}\text{ mm}$



Area =

c. 1.2 m



Area =

Determine a Square Root given its Square

4. Find the side length for the given area:

a. 144 m^2



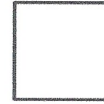
Side length =

b. $\frac{4}{9}\text{ cm}^2$



Side length =

c. 0.64 mm^2



Side length =

5. Determine the **SQUARE** of 16 and the **SQUARE ROOT** of 16. Are they the same values or different?

Perfect Squares

A Perfect Square is any **WHOLE** number, **FRACTION**, or **DECIMAL** that can be written as a **PRODUCT** of **TWO equal FACTORS**.

Examples: Is 49 a PS?

Is $\frac{9}{16}$ a PS?

Is 0.36 a PS?

6. List all the **WHOLE NUMBER** perfect squares between 1 and 100:

7. List all the **DECIMAL** perfect squares between 0.01 and 0.64:

8. Write 5 **FRACTION** perfect squares:

9. Find the Perfect Square given the following Square Roots:

a. $\frac{5}{8}$

b. 1.2

c. $\frac{3}{13}$

d. 0.5

e. 2.25

f. $\frac{1}{2}$

How to determine if a fraction or decimal is a Perfect Square.

A **FRACTION** is a **PERFECT SQUARE** if the **NUMERATOR** and the **DENOMINATOR** are both perfect squares, **AFTER THE FRACTION HAS BEEN COMPLETELY REDUCED.**

10. Are the following perfect squares? State your reasoning.

a. $\frac{9}{25}$

b. $\frac{20}{45}$

c. $\frac{32}{46}$

d. 2.25

e. 0.27

f. 0.16

Identifying Perfect Squares using a Calculator

The **SQUARE ROOT** of a perfect square is always either a **TERMINATING** decimal or a **REPEATING** decimal.

11. Determine if the following are perfect squares, using your calculator. State your reasoning.

a. 1.69

b. 3.5

c. 6.26

d. 0.25

e. $\frac{8}{18}$

f. $\frac{5}{19}$

Assignment 1.1: