Ch. 1.1: Squares & Square Roots

Look at the following numbers: 2, 4, 25, 27, 8, 10, and 64

a) Which numbers are perfect squares? Which ones are NOT perfect squares?

b) Draw a square to represent the square number 25 (like we did in class for 16).

c) Make a factor tree of 36. Can you tell from the factor tree is 36 is a perfect square?

1. **Modelling**

We now know how to show that a number is a **perfect square** in 2 different ways. Show that **64** is a perfect square using each of our two methods:

DRAW A DIAGRAM	SHOW THAT THE PRIME FACTORS DIVIDE INTO 2 EQUAL GROUPS

Find the square root of **16** using each of our two methods:

DRAW A DIAGRAM	USE THE PRIME FACTORS

Close your eyes… Which of the 2 methods is easier for you to remember in your head?
_____

2. **Definitions**

- The _____ of a number represents the ***area*** of a square.
- The _____ _____ of a number represents the ***side length*** of a square.
- Therefore, **squaring** a number and **square rooting** a number are _____ operations.
- We write the square root of a number like this: _____
- Give an example of 2 other operations that are INVERSE operations: _____ and _____

In your own words, explain what an ***inverse operation*** is:
_____

4. **Practice!**

a) Find $\sqrt{49}$ using prime factorization.

b) Is 50 the ***square root*** of 100? Show or explain your answer in 2 different ways.

c) Is 81 a perfect square? Is 40 a perfect square? (Use your preferred method.)

d) Determine the side length of a square with an area of $196cm^2$. (Use your preferred method.)