Unit 2: Integers

Name:_____

Lesson 7: Square Roots

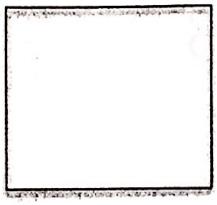
Hour:_____

s 2.7

## Square a Number

What does it mean to square a number? What is 3 squared? Multiply it by itself

9



Squared is often written with a little 2 called an exponent: $3^2$

Can we square a negative number? What about -5 squared? you will get a positive # because negative • negative = positive

yes! $(-3)^2 = (-3)(-3) = 9$

| Words | Exponent | Multiplication | Product (Perfect Square) |
|---|---|---|---|
| 1 squared | 2 | 1 • 1 | 1 |
| 2 squared | 2 | 2 • 2 | 4 |
| 3 squared | 2 | 3 • 3 | 9 |
| 4 squared | | | |
| 5 squared | | | |
| 6 squared | | | |
| 7 squared | | | |
| 8 squared | | | |
| 9 squared | | | |
| 10 squared | | | |
| 11 squared | | | |
| 12 squared | | | |

## Square Root

The opposite of squaring a number is taking the <u>square root</u> of the number.

$\sqrt{\ }$ this is called the: "square root"

$\sqrt{9} = \sqrt{3 \cdot 3} =$ 3

Examples:

1) $\sqrt{25} = \sqrt{5 \cdot 5} = 5$

2) $-\sqrt{36} = -\sqrt{6 \cdot 6} = -6$

3) $-\frac{\sqrt{81}}{\sqrt{9}} = -\frac{\sqrt{9 \cdot 9}}{\sqrt{3 \cdot 3}} = -\frac{9}{3} = -3$

4) $\sqrt{\frac{16}{25}} = \sqrt{\frac{4 \cdot 4}{5 \cdot 5}} = \frac{4}{5}$

5) $\sqrt{225} - \sqrt{144} = \sqrt{15 \cdot 15} - \sqrt{12 \cdot 12} = 15 - 12 = 3$

Estimating a Square Root:

1) $\sqrt{47} \approx 6.8$ between $\sqrt{36}$ and $\sqrt{49}$ 6-7

2) $-\sqrt{90} \approx -9.5$ between $\sqrt{81}$ and $\sqrt{100}$ -9-10

3) $\sqrt{17} \approx 4.2$ between $\sqrt{16}$ and $\sqrt{25}$ 4-5

4) $-\sqrt{32} \approx -5.6$ between $\sqrt{25}$ and $\sqrt{36}$ -5-6

5) $\sqrt{101} \approx 10.1$ between $\sqrt{100}$ and $\sqrt{121}$ 10-11

**Assignment:** Square Root Worksheet ALL

Modified: Square Root Worksheet EVENS