Name_____ Date_____

Perfect Squares

Reading/discussion

Today we are going to look at square roots. Working out the square root of a number is an **inverse operation**. Inverse simply means opposite, so, in fact, you have been doing inverse operations for many years.

Subtraction is the inverse of **addition**: 24 +16 = 40 so 40 – 16 = 24.

Division is the inverse of **multiplication**: 12 x 8 = 96 so 96 ÷ 8 = 12.

In the same way, the **square** of a number is that number multiplied by itself:

12^2 = 12 x 12 = 144.

And

The **square root** of a number is the original number which was multiplied by itself:

$\sqrt{144}$ = 12.

The easiest way to start learning square roots is to look at perfect squares.

Perfect squares are the squares of whole numbers.

For example: 25 is a perfect square: 5^2 (5 x 5) = 25.

26 is <u>not</u>: 5.09901951^2 (5.09901051 x 5.09901951) = 26.

Here are 10 perfect squares: 1,4,9,16,25,36,49,64,81,100. And here are their square roots:

- The square root of 1 is 1
- The square root of 4 is 2
- The square root of 9 is 3
- The square root of 16 is 4
- The square root of 25 is 5
- The square root of 36 is 6
- The square root of 49 is 7
- The square root of 64 is 8
- The square root of 81 is 9
- The square root of 100 is 10

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Perfect Squares Answers

A. Charting the square roots of perfect squares.

Can you complete the following chart?

$1^2 = 1 \quad \therefore \quad \sqrt{1} = 1$

$2^2 = \quad \therefore \quad \sqrt{} = 2$

$= 9 \quad \therefore \quad \sqrt{9} =$

$4^2 = \quad \therefore \quad \sqrt{16} =$

$= \quad \therefore \quad \sqrt{25} = 5$

$6^2 = 36 \quad \therefore \quad \sqrt{} =$

$= 49 \quad \therefore \quad \sqrt{49} =$

$8^2 = \quad \therefore \quad \sqrt{} = 8$

$= 81 \quad \therefore \quad \sqrt{81} =$

$\therefore \quad \sqrt{100} = 10$

B. Work out the square roots

Now that you have the chart, use it to find the answers to the following questions:

1. The square root of 16 is ……
2. The square root of 4 is ……..
3. The square root of 81 is ……
4. The square root of 49 is ……
5. The square root of 25 is ……
6. The square root of 9 is ……..
7. The square root of 36 is ……
8. The square root of 100 is ……..
9. The square root of 1 is ……
10. The square root of 64 is …….

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Perfect Squares Answers

Activity A.

$1^2 = 1 \therefore \sqrt{1} = 1$

$2^2 = 4 \therefore \sqrt{4} = 2$

$3^2 = 9 \therefore \sqrt{9} = 3$

$4^2 = 16 \therefore \sqrt{16} = 4$

$5^2 = 25 \therefore \sqrt{25} = 5$

$6^2 = 36 \therefore \sqrt{36} = 6$

$7^2 = 49 \therefore \sqrt{49} = 7$

$8^2 = 64 \therefore \sqrt{64} = 8$

$9^2 = 81 \therefore \sqrt{81} = 9$

$10^2 = 100 \therefore \sqrt{100} = 10$

Activity B.

1. The square root of 16 is 4
2. The square root of 4 is 2
3. The square root of 81 is 9
4. The square root of 49 is 7
5. The square root of 25 is 5
6. The square root of 9 is 3
7. The square root of 36 is 6
8. The square root of 100 is 10
9. The square root of 1 is 1
10. The square root of 64 is 8