Worked Examples - Square roots of Perfect Squares and Relationship Between Squares and Square Roots (IXL 8th Grade E.1 & E.5)

Finding a square root of a number is the opposite of squaring a number. If a square number or perfect square is the area of a square, then the square root of a number is the side length of a square. So for example, $3^2 = 9$ gives us both a perfect square and a square root. The perfect square is 9 and the square root of 9 is 3.

The symbol for a square root is called a radical. It looks like this: $\sqrt{}$. Do not confuse this with division. IT IS NOT DIVISION. It undoes an exponent of 2. So for example to ask for the square root of 36, we would write $\sqrt{36}$. Since 36 is a perfect square, we know it will give us a whole number 6. So $\sqrt{36} = 6$.

Let's look at some examples:

1. What is $\sqrt{16}$?

$\sqrt{16} = 4$

2. What is $\sqrt{1}$?

$\sqrt{1} = 1$

3. What is $\sqrt{196}$?

$\sqrt{196} = 14$

4. What is $\sqrt{(4)^2}$?

$\sqrt{4^2} = 4$

5. What is $\left(\sqrt{81}\right)^2$? $\left(\sqrt{81}\right)^2 = 81$

6. What is $\left(\sqrt{74}\right)^2$ $\left(\sqrt{74}\right)^2 = 74$

7. What is $\sqrt{83^2}$? $\sqrt{83^2} = 83$

8. What is $\sqrt{(69.5)^2}$? $\sqrt{(69.5)^2} = 69.5$