

Lesson 7.9 Squares and Square Roots

The **square** of a number is that number times itself. A square is expressed as 6^2 , which means 6×6 or 6 squared. The **square root** of a number is the number that, multiplied by itself, equals that number. The square root of 36 is 6: $\sqrt{36} = 6$

Not all square roots of numbers are whole numbers like 6. Numbers that have a whole number as their square root are called **perfect squares**.

The square root of any number that is not a perfect square is called a **radical number**. The symbol $\sqrt{\quad}$ is called a **radical sign**. When a number is not a perfect square, you can estimate its square root by determining which perfect squares it comes between.

$\sqrt{50}$ is a little more than 7, because $\sqrt{49}$ is exactly 7. $\sqrt{60}$ is between 7 and 8 but closer to 8, because 60 is closer to 64 than to 49.

Identify the square root of these perfect squares.

- | | a | b | c |
|----|---|--|--|
| | $\sqrt{16} = \underline{\hspace{2cm}}$ | $\sqrt{64} = \underline{\hspace{2cm}}$ | $\sqrt{25} = \underline{\hspace{2cm}}$ |
| 2. | $\sqrt{100} = \underline{\hspace{2cm}}$ | $\sqrt{1} = \underline{\hspace{2cm}}$ | $\sqrt{9} = \underline{\hspace{2cm}}$ |
| 3. | $\sqrt{36} = \underline{\hspace{2cm}}$ | $\sqrt{81} = \underline{\hspace{2cm}}$ | $\sqrt{4} = \underline{\hspace{2cm}}$ |

Estimate the following square roots without looking at the table on the next page.

4. $\sqrt{85}$ is between _____ and _____ but closer to _____.
5. $\sqrt{20}$ is between _____ and _____ but closer to _____.
6. $\sqrt{35}$ is between _____ and _____ but closer to _____.
7. $\sqrt{70}$ is between _____ and _____ but closer to _____.
8. $\sqrt{45}$ is between _____ and _____ but closer to _____.