

2.7: Find Square Roots and Compare Real Numbers

Goals: *Find square roots of perfect squares
 *Estimate square roots of non-perfect squares

Square root: one of two _____ factors of a number

$\sqrt{\quad}$ = “ “ sign.... **IT TALKS!!**

It asks the question:

“WHAT _____ TIMES _____ IS _____?”

Evaluate the given expression:

Ex: $\sqrt{16}$

Ex: $\sqrt{64}$

Ex: $\sqrt{81}$

Ex: $\sqrt{100}$

Ex: $\sqrt{121}$

Ex: $\sqrt{49}$

Perfect squares: a number whose _____ is an

_____.

1, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____,

_____, _____

Estimate Square Roots:

Ex: $\sqrt{40}$

1. Find the two closest _____ .
One above and one below.

2. Put the numbers in order from _____ to _____.

3. Find the _____ of the two _____.

4. Pick the _____ one.

Estimate the following square roots:

Ex: $\sqrt{110}$

Ex: $\sqrt{20}$

Ex: $-\sqrt{38}$

Ex: $\sqrt{8}$

Evaluate the expression for the given value of x :

Ex: $11 - \sqrt{x}$ when $x = 81$

Ex: $6\sqrt{x} + 3$ when $x = 100$

QUESTION

What number times itself would be 9? _____

Is there any other number times itself that could be 9? _____

All numbers have ____ square roots. One is _____ and one is _____.

Ex: $\sqrt{25}$

Ex: $-\sqrt{25}$

Ex: $\pm\sqrt{25}$

QUESTION

What number times itself would be -16 ? _____

Prove it by multiplying that number by itself. _____ x _____

Did you get -16 ?

Extension:

If \sqrt{x} means to find the square root (the number times itself) that equals x , what do you think $\sqrt[3]{x}$ means?

Evaluate:

Ex: $\sqrt[3]{8}$

Ex: $\sqrt[3]{27}$

Ex: $\sqrt[3]{64}$