SQUARE ROOT

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Introduction

 In Math, there is always an "opposite" operation! The opposite operation for "squaring" a number is taking the "square root". ‘?’ this symbol represents “square root”.

What is squaring a number?

Term for raising a number to the 2nd power is "squaring a number".

For example:
$2^2 = 4$. This can be read as 2 "squared" equals 4. This means that 2 x 2 = 4.

And as we said earlier that square root is the opposite of squaring a number, so,

?4 = 2

The following examples help us in understanding the concept better:

1. $3^2 = 9$ **OPPOSITE IS** ?9 = 3

3 squared is 9 The Square root of 9 is 3

2. $4^2 = 16$ **OPPOSITE IS** ?16 = 4

4 squared is 16 The Square root of 16 is 4

Try This:

1. ?25 (Answer: 5)
2. ?121 (Answer: 11)
3. ?625 (Answer: 25)

Properties of Square Roots

1. Multiplication property for square root expression:
The product of two square roots with different numbers inside can be written in a single root with the product of those two numbers.

?a × ?b =? (a x b)

For example:
?16 × ?25 = ?(16 x 25)
4 × 5 = ?400
20 = 20

2. Square of the number property:
When a number gets into the square root, it turns into a square of the number.
a x ?b = $?a^2$ x b

For example:
2 x ?25 = $?2^2$ x 25
2 × 5 = ?4 × 25
10 = ?100
10 = 10

3. The square root of a fraction can be written as individual roots.
? (a/b) = ? a / ? b

For example:
? (25/16) = ?25 / ?16
5/4 = 5/4

4. When a perfect square comes out of the root, it becomes the number without square.
?(a^2b) = a x ?b

For example:
?(16 x 3) = ?(4^2 x 3)
4 ?3

5. Addition and subtraction property
?a + ?b ? ? (a + b)

?16 + ?25 ? ? (16 + 25)

4 + 5 ? ?41

9 ? ?41

Similarly, ? a - ?b ? ? (a - b)
?16 - ?25 ? ? (16 – 25)

4 – 5 ? ? (-9)

-1 ? ? (-9)

Try the following questions:

1. ?(121 x^4 w^6 m^8) (Answer: 11 x^2 w^3 m^4)

2. ?(9/25) (Answer: 3/5)

Now try it yourself! Should you still need any help,click here to schedule live online session with e Tutor!

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Reference Links:

- http://en.wikipedia.org/wiki/Square_root
- http://cnx.org/content/m21975/latest/
- http://en.wikipedia.org/wiki/Square_root#Properties
- http://www.funtrivia.com/askft/Question100546.html
- http://en.wikipedia.org/wiki/Perfect_square

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