Finding Roots of Perfect Squares and Perfect Cubes

(8.EE.2)

A **radical** is an expression that has a square, cube, or other root. A **radicand** is the name of the number inside the radical symbol. The **index** is the small number that denotes whether we are dealing with a square root or cube root. A **perfect square** is the result of multiplying a number by itself. For example, 4 is a perfect square because 2 multiplied by itself equals 4. A **perfect cube** is the result of multiplying a number as a factor three times. For example, 8 is a perfect square because 2 • 2 • 2 = 8. The **square root** of a number, x, is the number that, when multiplied by itself, equals x. For example, the square root of 16 is 4, because 4 • 4 = 16. Finding the square root of a number is the inverse operation of squaring a number. The **cube root** of a number, x, is the number that, when multiplied as a factor three times, equals x. For example, the cube root of 27 is 3, because 3 • 3 • 3 = 27. Finding the cube root of a number is the inverse operation of cubing a number. An **integer** is a whole number that is positive, negative, or 0.

If your students…

Misconception #1: take a square root of a negative number or think you can't take the cube root of a negative number

WATCH: Introduction to square roots and cube roots

https://www.opened.com/video/introduction-to-square-roots-and-cube-roots-radicals/911504 6:58-9:30

Misconception #2: think you can't take the cube root of a negative number

https://www.opened.com/video/introduction-to-square-roots-and-cube-roots-radicals/911504 9:30-13:00

For extra practice with finding square roots:

PLAY: The Roots of Life

http://www.mathgames.com/skill/8.6-square-roots-of-perfect-squares

For extra practice with finding cube roots:

PLAY: Cube Roots of Perfect Cubes

http://www.mathgames.com/skill/8.18-cube-roots-of-perfect-cubes

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