What are Roots and Radicals?

Worksheet

A radical (root) undoes a power: the n-th root of x, written x, is the number that when raised to the power n gives x. The most common case is the square root, where n = 2.

@sqrt[n]{x} = x^{1/n}

Questions

1. Simplify 50.

A) 52
B) 25
C) 105
D) 50

2. What is 64?

A) 4
B) 8
C) 6
D) 16

3. Which expression equals x^(1/3)?

A) x
B) x
C) x
D) 3x

4. Simplify 8 2.

A) 4
B) 16
C) 16
D) 24

5. Simplify 72.

6. Evaluate 125.

7. Simplify 3 + 12.

8. Define: What is a radical?

9. Define: What does the index tell you?

10. Define: How do you simplify 72?

Answer Key

1. A) 52 - 50 = 25 2, so 50 = 25 2 = 52.
2. A) 4 - 4 = 64, so 64 = 4.
3. B) x - A power of 1/3 is the same as taking the cube root.
4. A) 4 - 8 2 = 16 = 4.
5. 72 = 36 2 72 = 36 2 72 = 62
6. 125 = 5 125 = 5
7. 12 = (43) = 23 3 + 23 = 33
8. A symbol () that represents a root of a number - the inverse operation of raising to a power.
9. It tells you which root to take: 2 means square root, 3 means cube root, and so on.
10. Factor out the largest perfect square: 72 = 362 = 62.