

# Square Roots and Cube Roots

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## Square and Cube Roots

### Squares

A square is a number multiplied by itself. For example,  $4 \times 4$  is four squared. In math notation, with "n" representing any number, a number squared is written as  $n^2$ , so four squared would be written as  $4^2$ . The following is a list of common perfect squares:

| Table of Squares from 1 - 25 |              |              |              |              |
|------------------------------|--------------|--------------|--------------|--------------|
| $1^2 = 1$                    | $6^2 = 36$   | $11^2 = 121$ | $16^2 = 256$ | $21^2 = 441$ |
| $2^2 = 4$                    | $7^2 = 49$   | $12^2 = 144$ | $17^2 = 289$ | $22^2 = 484$ |
| $3^2 = 9$                    | $8^2 = 64$   | $13^2 = 169$ | $18^2 = 324$ | $23^2 = 529$ |
| $4^2 = 16$                   | $9^2 = 81$   | $14^2 = 196$ | $19^2 = 361$ | $24^2 = 576$ |
| $5^2 = 25$                   | $10^2 = 100$ | $15^2 = 225$ | $20^2 = 400$ | $25^2 = 625$ |

### Square Roots

The opposite operation of squaring a number is finding its square root, and square roots are written with the radical symbol " $\sqrt{\quad}$ " over them. Because squaring and finding a number's square root are opposite operations, they cancel each other out. For example,  $\sqrt{25} = 5$  because  $5^2 = 25$ . The following is a list of common perfect square roots:

| Square Roots    |                   |  |  |
|-----------------|-------------------|--|--|
| $\sqrt{1} = 1$  | $\sqrt{49} = 7$   |  |  |
| $\sqrt{4} = 2$  | $\sqrt{64} = 8$   |  |  |
| $\sqrt{9} = 3$  | $\sqrt{81} = 9$   |  |  |
| $\sqrt{16} = 4$ | $\sqrt{100} = 10$ |  |  |
| $\sqrt{25} = 5$ | $\sqrt{121} = 11$ |  |  |
| $\sqrt{36} = 6$ | $\sqrt{144} = 12$ |  |  |

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### Cubes

A cube is a number multiplied by itself and then multiplied by itself again. For example,  $4 \times 4 \times 4$  is four cubed. In math notation, with "n" representing any number, a number cubed is written as  $n^3$ , so four cubed is written as  $4^3$ . The following is a list of common perfect cubes:

|               |               |
|---------------|---------------|
| $1^3 = 1$     | $11^3 = 1331$ |
| $2^3 = 8$     | $12^3 = 1728$ |
| $3^3 = 27$    | $13^3 = 2197$ |
| $4^3 = 64$    | $14^3 = 2744$ |
| $5^3 = 125$   | $15^3 = 3375$ |
| $6^3 = 216$   | $16^3 = 4096$ |
| $7^3 = 343$   | $17^3 = 4913$ |
| $8^3 = 512$   | $18^3 = 5832$ |
| $9^3 = 729$   | $19^3 = 6859$ |
| $10^3 = 1000$ | $20^3 = 8000$ |

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### Cube Roots

The opposite operation of cubing a number is finding the cube root, and cube roots are written with the radical symbol " $\sqrt[3]{\quad}$ " over them. Because cubing and finding a number's cube root are

opposite operations, they cancel each other out. For example,  $\sqrt{1253} = 5$  because  $5^3=125$ . The following is a list of common perfect cube roots:

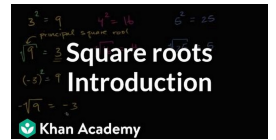
### Cube Root 1 to 30



|                         |                         |                         |
|-------------------------|-------------------------|-------------------------|
| $\sqrt[3]{1} = 1$       | $\sqrt[3]{11} = 2.2239$ | $\sqrt[3]{21} = 2.7589$ |
| $\sqrt[3]{2} = 1.2599$  | $\sqrt[3]{12} = 2.2894$ | $\sqrt[3]{22} = 2.802$  |
| $\sqrt[3]{3} = 1.4422$  | $\sqrt[3]{13} = 2.3513$ | $\sqrt[3]{23} = 2.8438$ |
| $\sqrt[3]{4} = 1.5874$  | $\sqrt[3]{14} = 2.4101$ | $\sqrt[3]{24} = 2.8844$ |
| $\sqrt[3]{5} = 1.7099$  | $\sqrt[3]{15} = 2.4662$ | $\sqrt[3]{25} = 2.924$  |
| $\sqrt[3]{6} = 1.8171$  | $\sqrt[3]{16} = 2.5198$ | $\sqrt[3]{26} = 2.9624$ |
| $\sqrt[3]{7} = 1.9129$  | $\sqrt[3]{17} = 2.5712$ | $\sqrt[3]{27} = 3$      |
| $\sqrt[3]{8} = 2$       | $\sqrt[3]{18} = 2.6207$ | $\sqrt[3]{28} = 3.0365$ |
| $\sqrt[3]{9} = 2.08$    | $\sqrt[3]{19} = 2.6684$ | $\sqrt[3]{29} = 3.0723$ |
| $\sqrt[3]{10} = 2.1544$ | $\sqrt[3]{20} = 2.7144$ | $\sqrt[3]{30} = 3.1072$ |

### Intro to square roots

Voiceover] If you're watching a movie and someone is attempting to do fancy mathematics on a chalkboard, you'll almost always see a symbol that looks like this. This radical symbol. And this is used to show the square root and we'll see other types of roots as well, but your question is, well, what does this thing actually mean?



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## Square Roots and Cube Roots Practice

### Square Roots Worksheet

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## Square Roots and Cube Roots Learn PDF



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### Squares, Cubes, and Their Roots

Many students confuse the functions of squares, cubes, and their roots, and it can be difficult to recognize these numbers without memorizing them. This handout serves as a reference tool and provides a brief explanation of squares, square roots, cubes, and cube roots.

#### Squares

A square is a number multiplied by itself. For example,  $4 \times 4$  is four squared. In math notation, with "n" representing any number, a number squared is written as  $n^2$ , so four squared would be written as  $4^2$ . The following is a list of common perfect squares:

|            |              |              |
|------------|--------------|--------------|
| $0^2 = 0$  | $7^2 = 49$   | $14^2 = 196$ |
| $1^2 = 1$  | $8^2 = 64$   | $15^2 = 225$ |
| $2^2 = 4$  | $9^2 = 81$   | $16^2 = 256$ |
| $3^2 = 9$  | $10^2 = 100$ | $17^2 = 289$ |
| $4^2 = 16$ | $11^2 = 121$ | $18^2 = 324$ |
| $5^2 = 25$ | $12^2 = 144$ | $19^2 = 361$ |

### Square-Cubes-and-Their-Roots.pdf

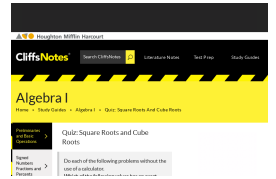
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## Square Roots and Cube Roots Quiz

### Quiz: Square Roots and Cube Roots

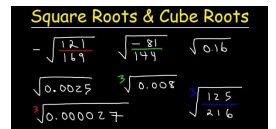
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## Square Roots and Cube Roots Quiz

### Challenging Quiz On Square And Cube Roots

When it comes to mathematics, some people have a hard time finding the squares and cube roots for some numbers. For this quiz, you should know how to calculate square and cube roots and find out an approximate square and cube root. Give it a try and all the best!



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