math Antics
Exercises

Name: _____

Date: _____

Exponents & Square Roots

1 Fill in the blank.

This symbol $\sqrt{}$ without any index number, is the _____ root.

2 Fill in the blank.

The root sign is also called the _____ sign.

3 Fill in the blank.

Exponents and Roots are _____ operations.

4 Use what you know about exponents and roots to fill in the missing number.

$7^2 = 49$

$\sqrt[2]{49} = \_\_\_$

5 Use what you know about exponents and roots to fill in the missing number.

$3^4 = 81$

$\sqrt[4]{81} = \_\_\_$

6 Use what you know about exponents and roots to fill in the missing number.

$\sqrt[3]{125} = 5$

$\_\_\_^3 = 125$

7 Use the multiplication table to find the roots of these "perfect squares".

$\sqrt{25} = \_\_\_$ $\sqrt{64} = \_\_\_$

$\sqrt{36} = \_\_\_$ $\sqrt{100} = \_\_\_$

8 Calculate this cube root.

$\sqrt[3]{8} = \_\_\_$

9 Use the root function on a calculator to find the value of this root. (Round your answer to 2 decimal places.)

$\sqrt{2} =$

10 Use the root function on a calculator to find the value of this root. (Round your answer to 2 decimal places.)

$\sqrt[3]{2} =$

math Antics Exercises

Name: _____

Date: _____

Exponents & Square Roots

1 Fill in the blank.

This symbol $\sqrt{}$ without any index number, is the square (or 2nd) root.

2 Fill in the blank.

The root sign is also called the radical sign.

3 Fill in the blank.

Exponents and Roots are inverse operations.

4 Use what you know about exponents and roots to fill in the missing number.

$7^2 = 49$

$\sqrt[2]{49} = 7$

5 Use what you know about exponents and roots to fill in the missing number.

$3^4 = 81$

$\sqrt[4]{81} = 3$

6 Use what you know about exponents and roots to fill in the missing number.

$\sqrt[3]{125} = 5$

$5^3 = 125$

7 Use the multiplication table to find the roots of these "perfect squares".

$\sqrt{25} = 5$ $\quad \sqrt{64} = 8$

$\sqrt{36} = 6$ $\quad \sqrt{100} = 10$

8 Calculate this cube root.

$\sqrt[3]{8} = 2$

9 Use the root function on a calculator to find the value of this root. (Round your answer to 2 decimal places.)

$\sqrt{2} = 1.41$

10 Use the root function on a calculator to find the value of this root. (Round your answer to 2 decimal places.)

$\sqrt[3]{2} = 1.26$

See Video for step-by-step solutions to each problem.

math Antics Worksheets

Name:

Date:

Inverse Operations

A-ESR 1

Instructions: Exponents and Roots are inverse operations. An exponent can undo a root and vice versa. For each of these pairs of operations, use the first equation to fill in the missing number in the second equation.

1. $2^5 = 32$

   $\sqrt[5]{32} = 2$

2. $\sqrt[7]{128} = 2$

   $2^7 = \square$

3. $3^4 = 81$

   $\sqrt[4]{81} = \square$

4. $\sqrt[3]{343} = 7$

   $7^{\square} = 343$

5. $\sqrt[2]{225} = 15$

   $\square^2 = 225$

6. $5^3 = 125$

   $\sqrt[\square]{125} = 5$

7. $\sqrt[5]{243} = 3$

   $3^5 = \square$

8. $7^2 = 49$

   $\sqrt[2]{\square} = 7$

9. $\sqrt[9]{512} = 2$

   $2^{\square} = 512$

10. $4^4 = 256$

    $\sqrt[4]{256} = \square$

11. $11^2 = 121$

    $\sqrt[\square]{121} = 11$

12. $\sqrt[2]{169} = 13$

    $\square^2 = 169$

math Antics Worksheets

Name: _____

Date: _____

"Perfect Squares"

A-ESR 2

Instructions: Use a multiplication table to help find the answers to these square roots. (Hint: for a few of the problems that are not on the multiplication table, you will also need to use what you know about powers of 10)

1. $\sqrt{4} = 2$
2. $\sqrt{100} =$ ____
3. $\sqrt{36} =$ ____
4. $\sqrt{9} =$ ____
5. $\sqrt{400} =$ ____
6. $\sqrt{1} =$ ____
7. $\sqrt{25} =$ ____
8. $\sqrt{49} =$ ____
9. $\sqrt{81} =$ ____
10. $\sqrt{16} =$ ____
11. $\sqrt{64} =$ ____
12. $\sqrt{900} =$ ____
13. $\sqrt{121} =$ ____
14. $\sqrt{144} =$ ____
15. $\sqrt{0} =$ ____
16. $\sqrt{10{,}000} =$ _____

math Antics Worksheets

Name: _____

Date: _____

Finding Roots with a Calculator

A-ESR 3

Instructions: Use the root function on a calculator to find these roots. Round your answers to 3 decimal places.

1. $\sqrt{2} =$ 1.414
2. $\sqrt{3} =$ _____
3. $\sqrt[3]{3} =$ _____
4. $\sqrt[3]{7} =$ _____
5. $\sqrt{12} =$ _____
6. $\sqrt[4]{9} =$ _____
7. $\sqrt{21} =$ _____
8. $\sqrt{50} =$ _____
9. $\sqrt[5]{50} =$ _____
10. $\sqrt[3]{100} =$ _____

math Antics Worksheets

Name:

Date:

Inverse Operations

A-ESR 1

Instructions: Exponents and Roots are inverse operations. An exponent can undo a root and vice versa. For each of these pairs of operations, use the first equation to fill in the missing number in the second equation.

1. $2^5 = 32$

   $\sqrt[5]{32} = 2$

2. $\sqrt[7]{128} = 2$

   $2^7 = 128$

3. $3^4 = 81$

   $\sqrt[4]{81} = 3$

4. $\sqrt[3]{343} = 7$

   $7^3 = 343$

5. $\sqrt[2]{225} = 15$

   $15^2 = 225$

6. $5^3 = 125$

   $\sqrt[3]{125} = 5$

7. $\sqrt[5]{243} = 3$

   $3^5 = 243$

8. $7^2 = 49$

   $\sqrt[2]{49} = 7$

9. $\sqrt[9]{512} = 2$

   $2^9 = 512$

10. $4^4 = 256$

    $\sqrt[4]{256} = 4$

11. $11^2 = 121$

    $\sqrt[2]{121} = 11$

12. $\sqrt[2]{169} = 13$

    $13^2 = 169$

math Antics Worksheets

Name:

Date:

"Perfect Squares"

A-ESR 2

Instructions: Use a multiplication table to help find the answers to these square roots. (Hint: for a few of the problems that are not on the multiplication table, you will also need to use what you know about powers of 10)

1. $\sqrt{4} = 2$
2. $\sqrt{100} = 10$
3. $\sqrt{36} = 6$
4. $\sqrt{9} = 3$
5. $\sqrt{400} = 20$
6. $\sqrt{1} = 1$
7. $\sqrt{25} = 5$
8. $\sqrt{49} = 7$
9. $\sqrt{81} = 9$
10. $\sqrt{16} = 4$
11. $\sqrt{64} = 8$
12. $\sqrt{900} = 30$
13. $\sqrt{121} = 11$
14. $\sqrt{144} = 12$
15. $\sqrt{0} = 0$
16. $\sqrt{10{,}000} = 100$

math Antics Worksheets

Name: _____

Date: _____

Finding Roots with a Calculator

A-ESR 3

Instructions: Use the root function on a calculator to find these roots. Round your answers to 3 decimal places.

1. $\sqrt{2} =$ 1.414
2. $\sqrt{3} =$ 1.732
3. $\sqrt[3]{3} =$ 1.442
4. $\sqrt[3]{7} =$ 1.913
5. $\sqrt{12} =$ 3.464
6. $\sqrt[4]{9} =$ 1.732
7. $\sqrt{21} =$ 4.583
8. $\sqrt{50} =$ 7.071
9. $\sqrt[5]{50} =$ 2.187
10. $\sqrt[3]{100} =$ 4.642