

## Inverse Operations

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  $\sqrt{225} = 15$   
 $15^2 = 225$

6  $5^3 = 125$   
 $\sqrt[3]{125} = 5$

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

8  $7^2 = 49$   
 $\sqrt{49} = 7$

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

10  $4^4 = 256$   
 $\sqrt[4]{256} = 4$

11  $11^2 = 121$   
 $\sqrt{121} = 11$

12  $\sqrt{169} = 13$   
 $13^2 = 169$

## “Perfect Squares”

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  $\sqrt{4} = \underline{2}$

2  $\sqrt{100} = \underline{10}$

3  $\sqrt{36} = \underline{6}$

4  $\sqrt{9} = \underline{3}$

5  $\sqrt{400} = \underline{20}$

6  $\sqrt{1} = \underline{1}$

7  $\sqrt{25} = \underline{5}$

8  $\sqrt{49} = \underline{7}$

9  $\sqrt{81} = \underline{9}$

10  $\sqrt{16} = \underline{4}$

11  $\sqrt{64} = \underline{8}$

12  $\sqrt{900} = \underline{30}$

13  $\sqrt{121} = \underline{11}$

14  $\sqrt{144} = \underline{12}$

15  $\sqrt{0} = \underline{0}$

16  $\sqrt{10,000} = \underline{100}$

## Finding Roots with a Calculator

ESR 3

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

1  $\sqrt{2} = \underline{1.414}$

2  $\sqrt{3} = \underline{1.732}$

3  $\sqrt[3]{3} = \underline{1.442}$

4  $\sqrt[3]{7} = \underline{1.913}$

5  $\sqrt{12} = \underline{3.464}$

6  $\sqrt[4]{9} = \underline{1.732}$

7  $\sqrt{21} = \underline{4.583}$

8  $\sqrt{50} = \underline{7.071}$

9  $\sqrt[5]{50} = \underline{2.187}$

10  $\sqrt[3]{100} = \underline{4.642}$