math Antics Worksheets

Name: _____

Date: _____

Exponent Rules Practice

EIA 1

Instructions: Find the value of these exponents using the rules that you learned in the video. You will also need to know the perfect squares from the multiplication table.

1. $2^0 = 1$
2. $10^1 = 10$
3. $5^2 = 25$
4. $5^0 = 1$
5. $x^1 = x$
6. $2^2 = 4$
7. $7^2 = 49$
8. $7^1 = 7$
9. $7^0 = 1$
10. $x^0 = 1$
11. $a^1 = a$
12. $a^0 = 1$
13. $6^2 = 36$
14. $3^2 = 9$
15. $3^1 = 3$
16. $12^2 = 144$
17. $8^2 = 64$
18. $m^0 = 1$
19. $29^1 = 29$
20. $32^0 = 1$

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Exponent - Root Relationship

EIA 2

Instructions: Use what you've learned about the relationship between exponents and roots to evaluate these expressions.

1. $(\sqrt{7})(\sqrt{7}) =$ 7

2. $\sqrt{(x)(x)} =$ x
   where x ≥ 0

3. $(\sqrt{15})(\sqrt{15}) =$ 15

4. $(\sqrt[3]{x})(\sqrt[3]{x})(\sqrt[3]{x}) =$ x

5. $(\sqrt{b})^2 =$ b
   where b ≥ 0

6. $\pm\sqrt{(a \times a)} =$ ± a

7. $\sqrt{(9 \times 9)} =$ 9

8. $(\sqrt{99})^2 =$ 99

9. $\sqrt[2]{c^2} =$ c
   where c ≥ 0

10. $(\sqrt{10})(\sqrt{10}) =$ 10

11. $(\sqrt[3]{2x})^3 =$ 2x

12. $\sqrt{(5 \times 5)} =$ 5

13. $\pm\sqrt{(n)(n)} =$ ± n

14. $\sqrt[3]{b^3} =$ b

15. $\sqrt{(x+1)^2} =$ x + 1
    where x ≥ 0

16. $\sqrt[3]{(4)(4)(4)} =$ 4

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1-Step Equations with Exponents & Roots - Set 1

ESR 3

Instructions: Solve for x. (Remember to do the same thing to both sides of the equation.)

1 $\sqrt{x} = 4$

$(\sqrt{x})^2 = 4^2$

$x = 16$

2 $x^2 = 49$

$\sqrt{x^2} = \pm\sqrt{49}$

$x = \pm 7$

3 $x^2 = 100$

$\sqrt{x^2} = \pm\sqrt{100}$

$x = \pm 10$

4 $\sqrt{x} = 2$

$(\sqrt{x})^2 = 2^2$

$x = 4$

5 $\sqrt{x} = 8$

$(\sqrt{x})^2 = 8^2$

$x = 64$

6 $x^2 = 81$

$\sqrt{x^2} = \pm\sqrt{81}$

$x = \pm 9$

7 $11 = \sqrt{x}$

$11^2 = (\sqrt{x})^2$

$121 = x$

or $x = 121$

8 $x^3 = 8$

$\sqrt[3]{x^3} = \sqrt[3]{8}$

$x = 2$

9 $x^2 = 36$

$\sqrt{x^2} = \pm\sqrt{36}$

$x = \pm 6$

10 $\sqrt[3]{x} = 5$

$(\sqrt[3]{x})^3 = 5^3$

$x = 125$

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1-Step Equations with Exponents & Roots - Set 2

ESR 4

Instructions: Solve for x. (Remember to do the same thing to both sides of the equation.)

1 $x^2 = 64$

$\sqrt{x^2} = \pm\sqrt{64}$

$x = \pm 8$

2 $\sqrt{x} = 6$

$\sqrt{x}^2 = 6^2$

$x = 36$

3 $x^2 = 400$

$\sqrt{x^2} = \pm\sqrt{400}$

$x = \pm 20$

4 $\sqrt{x} = 12$

$\sqrt{x}^2 = 12^2$

$x = 144$

5 $\sqrt[3]{x} = 6$

$\sqrt[3]{x}^3 = 6^3$

$x = 216$

6 $x^4 = 81$

$\sqrt[4]{x^4} = \pm\sqrt[4]{81}$

$x = \pm 3$

7 $\sqrt[3]{x} = 2$

$\sqrt[3]{x}^3 = 2^3$

$x = 8$

8 $x^3 = 125$

$\sqrt[3]{x^3} = \sqrt[3]{125}$

$x = 5$

9 $x^2 = 144$

$\sqrt{x^2} = \pm\sqrt{144}$

$x = \pm 12$

10 $x^3 = 27$

$\sqrt[3]{x^3} = \sqrt[3]{27}$

$x = 3$