

Exponent Rules Practice

A-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 $2^0 = \underline{1}$

2 $10^1 = \underline{10}$

3 $5^2 = \underline{25}$

4 $5^0 = \underline{1}$

5 $x^1 = \underline{x}$

6 $2^2 = \underline{4}$

7 $7^2 = \underline{49}$

8 $7^1 = \underline{7}$

9 $7^0 = \underline{1}$

10 $x^0 = \underline{1}$

11 $a^1 = \underline{a}$

12 $a^0 = \underline{1}$

13 $6^2 = \underline{36}$

14 $3^2 = \underline{9}$

15 $3^1 = \underline{3}$

16 $12^2 = \underline{144}$

17 $8^2 = \underline{64}$

18 $m^0 = \underline{1}$

19 $29^1 = \underline{29}$

20 $32^0 = \underline{1}$

Exponent - Root Relationship

A-EIA 2

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

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

2 $\sqrt{(x)(x)} = \underline{x}$
where $x \geq 0$

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

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

5 $(\sqrt{b})^2 = \underline{b}$
where $b \geq 0$

6 $\pm\sqrt{(a \times a)} = \underline{\pm a}$

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

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

9 $\sqrt[2]{c^2} = \underline{c}$
where $c \geq 0$

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

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

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

13 $\pm\sqrt{(n)(n)} = \underline{\pm n}$

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

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

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

1-Step Equations with Exponents & Roots - Set 1

A-ESR 3

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

$$\begin{aligned} 1 \quad \sqrt{x} &= 4 \\ \sqrt{x}^2 &= 4^2 \\ x &= 16 \end{aligned}$$

$$\begin{aligned} 2 \quad x^2 &= 49 \\ \sqrt{x^2} &= \pm\sqrt{49} \\ x &= \pm 7 \end{aligned}$$

$$\begin{aligned} 3 \quad x^2 &= 100 \\ \sqrt{x^2} &= \pm\sqrt{100} \\ x &= \pm 10 \end{aligned}$$

$$\begin{aligned} 4 \quad \sqrt{x} &= 2 \\ \sqrt{x}^2 &= 2^2 \\ x &= 4 \end{aligned}$$

$$\begin{aligned} 5 \quad \sqrt{x} &= 8 \\ \sqrt{x}^2 &= 8^2 \\ x &= 64 \end{aligned}$$

$$\begin{aligned} 6 \quad x^2 &= 81 \\ \sqrt{x^2} &= \pm\sqrt{81} \\ x &= \pm 9 \end{aligned}$$

$$\begin{aligned} 7 \quad 11 &= \sqrt{x} \\ 11^2 &= \sqrt{x}^2 \\ 121 &= x \\ \text{or } x &= 121 \end{aligned}$$

$$\begin{aligned} 8 \quad x^3 &= 8 \\ \sqrt[3]{x^3} &= \sqrt[3]{8} \\ x &= 2 \end{aligned}$$

$$\begin{aligned} 9 \quad x^2 &= 36 \\ \sqrt{x^2} &= \pm\sqrt{36} \\ x &= \pm 6 \end{aligned}$$

$$\begin{aligned} 10 \quad \sqrt[3]{x} &= 5 \\ \sqrt[3]{x}^3 &= 5^3 \\ x &= 125 \end{aligned}$$

1-Step Equations with Exponents & Roots - Set 2

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