Answer Key · Lesson 6.2: Properties of Rational Exponents and Radicals

School Launch · Algebra II · Unit 6 · Worksheet A · for the parent

Key

1. $x^{\frac{5}{6}}$

Simplify (assume $x > 0$): $x^{\frac{1}{2}} \cdot x^{\frac{1}{3}}$.

2. $22\sqrt{3}$

Simplify: $5\sqrt{12} + 4\sqrt{27}$.

3. D: $x \geq 3$; R: $y \geq -6$; $(3, -6)$

Give the domain and range of $f(x) = \sqrt{x - 3} - 6$, and its starting point.

4. $x^{\frac{11}{6}}$

1. Same base: add exponents $\frac{2}{3} + \frac{7}{6} = \frac{11}{6}$
2. Result: $x^{\frac{11}{6}}$

Simplify (assume $x > 0$): $x^{\frac{2}{3}} \cdot x^{\frac{7}{6}}$.

5. $x^{\frac{3}{2}}$

1. Same base: add exponents $\frac{2}{3} + \frac{5}{6} = \frac{3}{2}$
2. Result: $x^{\frac{3}{2}}$

Simplify (assume $x > 0$): $x^{\frac{2}{3}} \cdot x^{\frac{5}{6}}$.

6. $x^{\frac{3}{2}}$

1. Same base: add exponents $1 + \frac{1}{2} = \frac{3}{2}$
2. Result: $x^{\frac{3}{2}}$

Simplify (assume $x > 0$): $x^{\frac{3}{3}} \cdot x^{\frac{3}{6}}$.

7. $x^{\frac{8}{3}}$

1. Same base: add exponents $2 + \frac{2}{3} = \frac{8}{3}$
2. Result: $x^{\frac{8}{3}}$

Simplify (assume $x > 0$): $x^{\frac{6}{3}} \cdot x^{\frac{4}{6}}$.

8. $x^{\frac{5}{3}}$

1. Same base: add exponents $1 + \frac{2}{3} = \frac{5}{3}$
2. Result: $x^{\frac{5}{3}}$

Simplify (assume $x > 0$): $x^{\frac{3}{3}} \cdot x^{\frac{4}{6}}$.

9. $x^{\frac{5}{3}}$

1. Same base: add exponents $\frac{4}{3} + \frac{1}{3} = \frac{5}{3}$
2. Result: $x^{\frac{5}{3}}$

Simplify (assume $x > 0$): $x^{\frac{4}{3}} \cdot x^{\frac{2}{6}}$.

10. $x^{\frac{17}{6}}$

1. Same base: add exponents $2 + \frac{5}{6} = \frac{17}{6}$
2. Result: $x^{\frac{17}{6}}$

Simplify (assume $x > 0$): $x^{\frac{6}{3}} \cdot x^{\frac{5}{6}}$.