

L2 Simplifying Exponents Practice #2

Simplify – that is remove brackets and combine all possible terms

1. $\sqrt{100x^8}$

2. $(3k^2)^3$

3. $(xy^2)^{0.5}$

4. $\sqrt[4]{81x^6}$

5. $\left(\frac{3k}{y^2}\right)^2$

6. $\left(\frac{x}{3k^2}\right)^{-1}$

7. $\frac{x^{-1}}{7x^2}$

8. $8x^2(2x)^{-1}$

9. $\sqrt{9x^2y^{-1}}$

10. $\left(\frac{x}{3x^{-2}}\right)^2$

11. $(10y^{-3})^2$

12. $x\sqrt[4]{625x^2}$

13. $\left(\frac{5x}{125x^{-1}}\right)^{0.5}$

14. $(8xy)^2(4x)^{-1}$

15. $\left(\frac{5x^{-2}}{x}\right)^2$

16. $\left(\frac{7x^2}{\sqrt{x^2}}\right)^{-1}$

Answers: L2 Simplifying Exponents Practice #2

Simplify – that is remove brackets and combine all possible terms

$$1. \quad \sqrt{100x^8} = \sqrt{100} \sqrt{x^8} = 10x^4$$

$$2. \quad (3k^2)^3 = 3^3 x^{2 \times 3} = 27x^6$$

$$3. \quad (xy^2)^{0.5} = x^{0.5} y^{2 \times 0.5} = x^{0.5} y \quad \text{or } \sqrt{x} y \quad \text{if you prefer}$$

$$4. \quad \sqrt[4]{81x^6} = \sqrt[4]{81} \sqrt[4]{x^6} = 3x^{6/4} = 3x^{1.5}$$

$$5. \quad \left(\frac{3k}{y^2}\right)^2 = \frac{3^2 k^2}{(y^2)^2} = \frac{9k^2}{y^4}$$

$$6. \quad \left(\frac{x}{3k^2}\right)^{-1} = \frac{3k^2}{x}$$

$$7. \quad \frac{x^{-1}}{7x^2} = \frac{1}{7x^2 \times x} = \frac{1}{7x^3}$$

$$8. \quad 8x^2(2x)^{-1} = \frac{8x^2}{2x} = 4x$$

$$9. \quad \sqrt{9x^2y^{-1}} = \frac{\sqrt{9} \sqrt{x^2}}{\sqrt{y}} = \frac{3x}{\sqrt{y}} \quad \text{or } = 3xy^{-0.5} \quad \text{if you prefer}$$

$$10. \quad \left(\frac{x}{3x^{-2}}\right)^2 = \left(\frac{x \times x^2}{3}\right)^2 = \frac{(x^3)^2}{3^2} = \frac{x^6}{9}$$

$$11. \quad (10y^{-3})^2 = \left(\frac{10}{y^3}\right)^2 = \frac{10^2}{(y^3)^2} = \frac{100}{y^6} \quad \text{or } = 100y^{-6}$$

$$12. \quad x \sqrt[4]{625x^2} = x \times \sqrt[4]{625} \sqrt[4]{x^2} = x \times 5 \times x^{2/4} = 5x^{1.5}$$

$$13. \quad \left(\frac{5x}{125x^{-1}}\right)^{0.5} = \left(\frac{x^2}{25}\right)^{0.5} = \frac{\sqrt{x^2}}{\sqrt{25}} = \frac{x}{5}$$

$$14. \quad (8xy)^2(4x)^{-1} = \frac{8^2 x^2 y^2}{4x} = 16xy^2$$

$$15. \quad \left(\frac{5x^{-2}}{x}\right)^2 = \left(\frac{5}{x^3}\right)^2 = \frac{5^2}{(x^3)^2} = \frac{25}{x^6}$$

$$16. \quad \left(\frac{7x^2}{\sqrt{x^2}}\right)^{-1} = \frac{\sqrt{x^2}}{7x^2} = \frac{x}{7x^2} = \frac{1}{7x}$$