

## L2 Simplifying Exponents Practice #3

Simplify – that is remove brackets and combine all possible terms

1.  $\sqrt{0.25k^{10}}$

2.  $(6x)^2(2x)^{-2}$

3.  $(81y^4)^{0.25}$

4.  $\sqrt[3]{1000k^6}$

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

6.  $\left(\frac{5y}{x^2}\right)^{-1}$

7.  $\frac{x^3}{9x^{-2}}$

8.  $(6\sqrt{p})^2$

9.  $\sqrt{49a^{-2}b^3}$

10.  $(10x^{-1})^3\sqrt[3]{125x^6}$

11.  $\left(\frac{4p}{x^{-2}}\right)^2$

12.  $(5k^3)^{-2}$

13.  $\left(\frac{x}{36p^{-2}}\right)^{0.5}$

14.  $\left(\frac{x^{-1}}{4y}\right)^{-2}$

15.  $(2xy)^3(4y)^{-2}$

16.  $\left(\frac{2\sqrt{x}}{\sqrt{x^5}}\right)^{-1}$

## Answers: L2 Simplifying Exponents Practice #3

Simplify – that is remove brackets and combine all possible terms

$$1. \quad \sqrt{0.25k^{10}} = \sqrt{0.25} \sqrt{k^{10}} = 0.5k^5$$

$$2. \quad (6x)^2(2x)^{-2} = \frac{6^2x^2}{2^2x^2} = 9$$

$$3. \quad (81y^4)^{0.25} = 81^{0.25}y^{4 \times 0.25} = 3y$$

$$4. \quad \sqrt[3]{1000k^6} = \sqrt[3]{1000} \sqrt[3]{k^6} = 10k^2$$

$$5. \quad \left(\frac{k}{2y^2}\right)^3 = \frac{k^3}{2^3(y^2)^3} = \frac{k^3}{8y^6}$$

$$6. \quad \left(\frac{5y}{x^2}\right)^{-1} = \frac{x^2}{5y}$$

$$7. \quad \frac{x^3}{9x^{-2}} = \frac{x^3 \times x^2}{9} = \frac{x^5}{9}$$

$$8. \quad (6\sqrt{p})^2 = 6^2(\sqrt{p})^2 = 36p$$

$$9. \quad \sqrt{49a^{-2}b^3} = \frac{\sqrt{49} \sqrt{b^3}}{\sqrt{a^2}} = \frac{7b^{1.5}}{a} \quad \text{or} = 7a^{-1}b^{1.5} \text{ if you prefer}$$

$$10. \quad 10x^{-1}\sqrt[3]{125x^6} = \frac{10}{x} \times \sqrt[3]{125} \sqrt[3]{x^6} = \frac{10}{x} \times 5x^2 = 50x$$

$$11. \quad \left(\frac{4p}{x^{-2}}\right)^2 = (4px^2)^2 = 16p^2x^4$$

$$12. \quad (5k^3)^{-2} = \left(\frac{1}{5k^3}\right)^2 = \frac{1}{5^2(k^3)^2} = \frac{1}{25k^6} \quad \text{or} = 0.04k^{-6}$$

$$13. \quad \left(\frac{x}{36p^{-2}}\right)^{0.5} = \left(\frac{x p^2}{36}\right)^{0.5} = \frac{\sqrt{x}\sqrt{p^2}}{\sqrt{36}} = \frac{\sqrt{x} p}{6} \quad \text{or} = \frac{x^{0.5} p}{6}$$

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

$$15. \quad (2xy)^3(4y)^{-2} = \frac{2^3x^3y^3}{4^2y^2} = \frac{x^3y}{2} \quad \text{or} = \frac{1}{2}x^3y$$

$$16. \quad \left(\frac{2\sqrt{x}}{\sqrt{x^5}}\right)^{-1} = \frac{\sqrt{x^5}}{2\sqrt{x}} = \frac{x^{2.5}}{2x^{0.5}}$$