

Simplify the following problems as much as possible so that your answer uses only *positive* exponents.

1. $\frac{(kn)^{-5}}{v^2}$

2. $\left(\frac{4x}{2x^5}\right)^3$

3. $\left(\frac{2vq^6}{qv^3}\right)^{-2}$

4. $\frac{-3^{-2}b^2}{a^0b^{-3}}$

5. $\frac{5x^2y^{-3}}{a^{-3}b^4}$

6. $(2x^2y^3)(-5x^{-2}y^7)$

7. $(2acd)^3(3cda)$

8. $\frac{(5a^2)(6p^3)}{(2a^3)(5^{-1}p)^{-2}}$

For the following problems, use what you know about *rational exponents* to simplify as much as possible and/or find the value of each root.

9. $4^{\frac{5}{2}}$

10. $(-125)^{\frac{2}{3}}$

11. $625^{\frac{1}{5}}$

12. $\left(\frac{1}{8}\right)^{\frac{1}{3}}$

Simplify:

13. $\sqrt{18}$

14. $\sqrt{125}$

15. $\sqrt{a^2b^4}$

16. $\sqrt{75x^7y^5}$