Name Key

Exponents Practicee

Directions: Simplify each expression. Show some work!

1. $8f^{-4}g^{0} = \frac{8}{f^4}$

2. $\frac{8}{a^{-3}} = 8a^3$

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

4. $(m^3n^2)^5 = m^{15}n^{10}$

5. $(cd^6)^3 \cdot (c^5d^2)^2$
$c^3d^{18} \cdot c^{10}d^4 = c^{13}d^{22}$

6. $(w^5)^{-2} \cdot w^{-3} = w^{-10} \cdot w^{-3} = \frac{w^{-13}}{1} = \frac{1}{w^{13}}$

7. $\left(\frac{x^3y^4}{xy^5}\right)^{-3} = (x^4y^{-1})^{-3} = \frac{x^{-12}y^3}{1} = \frac{y^3}{x^{12}}$

8. $\frac{5m^2n^4}{m^2n} = 5n^3$

9. $\frac{(x^4)^2}{(x^3)^5} = \frac{x^8}{x^{15}} = \frac{x^{-7}}{1} = \frac{1}{x^7}$

10. $\frac{c^3d^2}{c^2d^5} = \frac{cd^{-3}}{1} = \frac{c}{d^3}$

11. $\left(\frac{s^3t}{st^4}\right)^2 = (s^2t^{-3})^2 = \frac{s^4t^{-6}}{1} = \frac{s^4}{t^6}$

12. $\left(\frac{6}{7}\right)^{-2} \cdot \left(\frac{4s}{6t}\right)^{-2}$
$\frac{6^{-2}}{7^{-2}} \cdot \frac{4^{-2}s^{-2}}{6^{-2}t^{-2}} = \frac{7^2}{6^2} \cdot \frac{6^2t^2}{4^2s^2} = \frac{49t^2}{16s^2}$

13. $\left(\frac{4}{7}\right)^{-2} = \frac{4^{-2}}{7^{-2}} = \frac{7^2}{4^2} = \frac{49}{16}$

14. $\frac{a^5b^2c^3}{a^6b^2c} = \frac{a^{-1}c^2}{1} = \frac{c^2}{a}$