

# EXPONENTS - EXTRA PRACTICE



• Evaluate or Simplify

$$A = \frac{2^3 \times 2^5}{2^4 \times 2^8} = \frac{2^8}{2^{12}} = \frac{1}{2^4} = \frac{1}{16}$$

$$B = \frac{8x^5y^{-4}}{16x^8y^2} = \frac{1}{2x^3y^6}$$

$$C = (2x^3y)^2 \cdot \left(\frac{3}{4}x^2y^5\right)^{-2} = 4x^6y^2 \cdot \left(\frac{3}{4}\right)^{-2}x^{-4}y^{-10} = 4x^2y^{-8} \cdot \left(\frac{4}{3}\right)^2 = \frac{64x^2y^8}{9y^8}$$

$$D = \left[\left(\frac{3}{4}\right)^2 \times \left(\frac{3}{4}\right)^{-3}\right]^{-2} = \left[\left(\frac{3}{4}\right)^{-1}\right]^{-2} = \left(\frac{3}{4}\right)^2 = \frac{9}{16}$$

$$E = \frac{(3xy)^2 \times (2x^2y)^{-1}}{(2xy^2)^{-3}} = \frac{9x^2y^2 \times 2^{-1}x^{-2}y^{-1}}{2^{-3}x^{-3}y^{-6}} = 9 \times 4x^3y^7 = 36x^3y^7$$

$$F = (2x^3y^{-2})^{-4} \times (3xy^{-5})^2 = 2^{-4}x^{-12}y^8 \times 3^2x^2y^{-10} = \frac{9}{16x^{10}y^2}$$

$$G = 2^{-5}x^6y \times \left(\frac{3}{5}x^2y^{-1}\right)^{-2} = \frac{x^6y}{2^5} \times \left(\frac{5}{3}\right)^2x^{-4}y^2 = \frac{25}{288}x^2y^3$$

$$H = \frac{16x^2y^{-3}}{8x^3y^2} = 2x^{-1}y^{-5} = \frac{2}{xy^5}$$

$$I = \frac{-32x^2y^4}{64x^3y^5} = -\frac{1}{2}x^{-1}y^{-1} = -\frac{1}{2xy}$$

$$J = \left(\frac{7x^3}{14x^{-5}}\right)^{-2} = \left(\frac{x^8}{2}\right)^{-2} = \left(\frac{2}{x^8}\right)^2 = \frac{4}{x^{16}}$$

$$K = \left( \frac{3,2x^3y^5}{1,6x^2y^{-1}} \right)^{-3} = (2xy^6)^{-3} = \frac{1}{8x^3y^{18}}$$

$$L = \frac{2^{x+3} \times 2^{3x+1}}{2^{x-3}} = \frac{2^{x+3+3x+1}}{2^{x-3}} = \frac{2^{4x+4}}{2^{x-3}} = 2^{3x+7}$$

$$M = \left( \frac{3^{x+1}}{3^{x-5}} \right)^{1/3} = (3^{x+1-(x-5)})^{1/3} = (3^6)^{1/3} = 3^2 = 9$$

$$N = (5^{x+3})^2 \times \frac{3}{5^{2x+1}} = \frac{5^{2x+6}}{5^{2x+1}} \times 3 = 3 \times 5^5$$

$$O = \frac{x^5(3x^2y^{-3})^2}{9x^3y^{-2}} = \frac{x^5 \times 9x^4y^{-6}}{9x^3y^{-2}} = x^6y^{-4} = \frac{x^6}{y^4}$$