

See the ANSWERS below on PAGE 2.

Simplify each expression.

$$1) 6c^3vx^2y^4 \cdot 8cvx^0y^2 \quad 2) \left(\frac{8m^4v^8c^{10}}{2mv^4c^{-3}} \right)$$

$$3) (4x^{-3}y^{-4}z^{-1})^2 \quad 4) 8^{-2}x^5yz^{-3}$$

$$5) \left(\frac{3x^3m}{4xm^4} \right) \quad 6) (5m^{-4}x^{-2})^{-3}$$

$$7) \left(\frac{3x^3z^2}{5xz} \right)^2 \quad 8) \left(\frac{4xy}{5x^{-3}y^2} \right)^0$$

$$9) (9m^2v^4z^8)^{\frac{1}{2}} \quad 10) (7^2v^0z^{10}y^{12})^{\frac{1}{2}}$$

Answers:

1) $6c^3 v x^2 y^4 \cdot 8cvx^0 y^2 = 48c^4 v^2 x^2 y^6$ 1) $6 \cdot 8 c^{2+1} v^{1+1} x^2 y^{4+2} = \boxed{48c^4 v^2 x^2 y^6}$

2) $\left(\frac{8m^4 v^8 c^{10}}{2mv^4 c^{-3}}\right) = 4m^3 v^4 c^{13}$ 2) $\frac{8}{2} m^{4-1} v^{8-4} c^{10-(-3)} = \boxed{4m^3 v^4 c^{13}}$

3) $(4x^{-3} y^{-4} z^{-1})^2 = \frac{16}{x^6 y^8 z^2}$ 3) $16 x^{-6} y^{-8} z^{-2} = \boxed{\frac{16}{x^6 y^8 z^2}}$

4) $8^{-2} x^5 y z^{-3} = \frac{x^5 y}{64 z^3}$ 4) $\frac{x^5 y}{8^2 z^3} = \boxed{\frac{x^5 y}{64 z^3}}$

5) $\left(\frac{3x^3 m}{4xm^4}\right) = \left(\frac{3x^2}{4m^3}\right)$ 5) $\frac{3}{4} x^{3-1} m^{1-4} = \frac{3}{4} x^2 m^{-3} = \boxed{\frac{3x^2}{4m^3}}$

6) $(5m^{-4} x^{-2})^{-3} = \frac{m^{12} x^6}{125}$ 6) $5^{-3} m^{12} x^6 = \frac{m^{12} x^6}{5^3} = \boxed{\frac{m^{12} x^6}{125}}$

7) $\left(\frac{3x^3 z^2}{5xz}\right)^2 = \left(\frac{9x^4 z^2}{25}\right)$ 7) $\frac{9x^6 z^4}{25x^2 z^2} = \frac{9}{25} x^{6-2} z^{4-2} = \boxed{\frac{9x^4 z^2}{25}}$

8) $\left(\frac{4xy}{5x^{-3} y^2}\right)^0 = 1$ 8) anything to the zero power = $\boxed{1}$

9) $(9m^2 v^4 z^8)^{\frac{1}{2}} = 3mv^2 z^4$ 9) $9^{1/2} m^1 v^2 z^4 = \boxed{3mv^2 z^4}$

10) $(7^2 v^0 z^{10} y^{12})^{\frac{1}{2}} = 7z^5 y^6$

10) $7^1 z^5 y^6 = \boxed{7z^5 y^6}$