

6.1 Enrichment and Extension

Properties of Exponents

Simplify the expression. Write your answer using only positive exponents.

$$1. \left(\frac{-3mn^2p^{-6}}{4mn} \right) \cdot \left(\frac{9m^{-2}p^2}{16mn^4p^5} \right)^{-1}$$

$$2. xy^3z^{-4} \cdot x^{-5} \cdot xz^{-4}y^{-3} \cdot x^0z$$

$$3. \frac{-4(-3xy^{-3}z^4)^{-2}}{2x^{-5}yz^5}$$

$$4. \frac{\frac{-4mp^{-3}q^2}{25m^2p^4}}{\frac{16mpq^2}{15m^2p^{-2}}}$$

$$5. x^2y^3z^{-4} \cdot \frac{x^5yz^{-7}}{x^{-1}y^{-1}z^4}$$

$$6. \left((x^{-3}y)^{-2} \right)^3 \cdot (x^4y^{-2})^{-1}$$

$$7. \left(\left(\frac{-2ab^2c}{4a^{-5}b^{-3}c^6} \right)^3 \right)^{-2}$$

$$8. \left(\frac{\left(\frac{zx^2y^{-4}}{xy^5x^{-2}} \right)^{-2} \cdot \frac{-2}{x^{-6}y^7}}{\frac{4xyz^{-3}}{x^{-6}}} \right)^{-3}$$