

Exponents and Rational Exponents

Simplify. Your answer should contain only positive exponents.

$$1) (-x^{-4}y^{-5} \cdot (-xy^{-3})^{-4} \cdot -yx^5)^2$$

$$2) (-mn^5 \cdot m^4)^4$$

$$3) (a^0b^3 \cdot a^{-2}b^{-2})^{-4}$$

Simplify. Your answer should contain only positive exponents with no fractional exponents in the denominator.

$$4) \frac{x^{\frac{1}{4}}y^{\frac{1}{3}}}{\left(x^{\frac{5}{4}}y^{\frac{1}{4}}\right)^2 \cdot x^{-\frac{2}{3}}y^4}$$

$$5) \frac{m^{\frac{5}{3}}}{\left(m^2n^{-\frac{3}{2}}\right)^{-\frac{1}{2}} \cdot m^2n^{-\frac{5}{3}}}$$

Write each expression in exponential form.

$$6) \frac{1}{(\sqrt{7p})^5}$$

$$7) \frac{1}{(\sqrt{5v})^5}$$

$$8) (\sqrt[3]{b})^4$$

$$9) \frac{1}{(\sqrt{6n})^5}$$

$$10) \frac{1}{(\sqrt{10x})^5}$$