

Rational Exponents - Practice

Simplify. Your answer should contain only positive exponents.

$$1) mp^{\frac{3}{4}}q^{\frac{1}{2}} \cdot 2m^{\frac{5}{4}}q^{\frac{7}{4}}$$

$$2) 3mn^{\frac{3}{2}}p^{\frac{3}{4}} \cdot 3m^{\frac{2}{3}}n^2p^{\frac{1}{2}}$$

$$3) 3p^{\frac{4}{3}}q^{\frac{1}{4}}r^{\frac{1}{2}} \cdot 4p^{\frac{5}{4}}q^{\frac{4}{3}}r^{\frac{1}{3}}$$

$$4) \left(m^{\frac{1}{2}}p^{\frac{4}{3}}\right)^{\frac{4}{3}}$$

$$5) \left(y^{\frac{5}{4}}z^{\frac{1}{2}}\right)^{\frac{1}{2}}$$

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

$$7) \frac{x^{\frac{5}{4}}y^{\frac{2}{2}}z^{\frac{3}{2}}}{3x^{\frac{1}{2}}y^{\frac{2}{3}}z^{\frac{7}{4}}}$$

$$8) \frac{3yx^{\frac{1}{2}}}{2x^{\frac{1}{3}}z^{\frac{3}{2}}}$$

$$9) \frac{yx^{\frac{3}{2}}z^{\frac{3}{2}}}{x^3y^{\frac{7}{4}}z^{\frac{3}{2}}}$$

$$10) m^{\frac{1}{4}} \cdot \left(m^{\frac{3}{4}}n^{\frac{1}{4}} \cdot m^{\frac{1}{3}}\right)^2$$

$$11) \left(xy^{\frac{5}{4}} \cdot yx^{\frac{7}{4}} \right)^{\frac{1}{2}}$$

$$12) x^2 y^2 \cdot \left(x^{\frac{3}{2}} y^{\frac{4}{3}} \right)^{\frac{7}{4}}$$

$$13) \frac{3yx^{\frac{1}{4}} \cdot 2y^{\frac{5}{3}}}{3y^{\frac{1}{2}}}$$

$$14) \frac{a^{\frac{3}{2}} b^2}{2a^{\frac{5}{3}} b^{\frac{1}{2}} \cdot 2a^{\frac{5}{3}}}$$

$$15) \frac{m^{\frac{5}{3}} n^{\frac{5}{3}}}{2m^{\frac{3}{2}} n^{\frac{3}{2}} \cdot 4m^{\frac{2}{3}} n^{\frac{5}{3}}}$$

$$16) \left(\frac{u^{\frac{3}{4}} v^2}{v^{\frac{3}{4}}} \right)^{\frac{3}{2}}$$

$$17) \frac{u^{\frac{3}{2}} v^{\frac{3}{2}}}{\left(u^{\frac{3}{4}} \right)^{\frac{4}{3}}}$$

$$18) \left(\frac{x^{\frac{1}{2}} y^2}{\left(x^{\frac{7}{4}} y^{\frac{5}{4}} \right)^{\frac{1}{2}}} \right)^{\frac{1}{2}}$$