

Assume that all variables are positive (so no absolute values necessary.) Simplify:

$$1) \text{ Ex: } \sqrt{\frac{4x^{-2}y^2}{3^{-1}z^{-3}}} \cdot \sqrt{\frac{9^{-1}x^3y^5}{16z^{-8}}} =$$

$$2) \text{ Ex: } \sqrt[4]{\frac{135y^9z^{-2}}{x^{-3}y}} \cdot \sqrt[4]{\frac{y^{-2}}{3^{-1}x^{-5}z^{10}}} =$$

$$3) \text{ Homework: } \sqrt[3]{\frac{y^{10}z^2}{4^{-1}x^5z^{-2}}} \cdot \sqrt[3]{\frac{16y^{-1}z^{-1}}{x^{-9}y^3}} =$$

$$4) \text{ Homework: } \sqrt{\frac{20a^{-5}b^9}{c^{-3}}} \cdot \sqrt{\frac{a^{-1}b^{-1}}{5^{-1}c^{15}}} =$$

Answers:

$$1) \frac{y^3z^5\sqrt{xyz}}{2\sqrt{3}} \text{ or } \frac{y^3z^5}{2}\sqrt{\frac{xyz}{3}} \quad 2) \frac{3x^2y}{z^3}\sqrt[4]{5y^2} \text{ or } \frac{3x^2y}{z^3}\sqrt[4]{5y^2} \quad 3) 4xy^2z\sqrt[3]{x} \quad 4) \frac{10b^4}{a^3c^6}$$