

Review Properties of Exponents

Date _____ Period _____

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

1) $y^{\frac{1}{4}} \cdot x^{-\frac{3}{2}} y^2$

2) $4x^{\frac{3}{2}} y^{-\frac{1}{2}} \cdot 4y$

3) $3u^{-2} v^{-\frac{1}{4}} \cdot 3u^{-3} v^{\frac{5}{4}}$

4) $4a^{\frac{1}{4}} \cdot 3a^{\frac{1}{4}} b^{\frac{5}{3}}$

5) $\left(a^0 b^{-\frac{3}{2}}\right)^{\frac{1}{2}}$

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

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

8) $\left(u^{\frac{3}{2}} v^{\frac{5}{3}}\right)^{\frac{1}{3}}$

$$9) \frac{x^{-\frac{3}{2}} y^2}{3x^{\frac{3}{2}} y^{\frac{1}{2}}}$$

$$10) \frac{2x^2 y^{-1}}{x^2 y^{\frac{2}{3}}}$$

$$11) \frac{3a^{-2} b^{-2}}{b^{\frac{1}{4}}}$$

$$12) \frac{x^{\frac{1}{2}} y^{-1}}{3y}$$

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

$$14) \frac{4y^{-2} \cdot 3x^{\frac{5}{3}}}{3x^0}$$

$$15) \frac{4u^{-\frac{3}{2}} v^{-2} \cdot 4vu^2}{3u^{\frac{1}{3}} v^{\frac{5}{4}}}$$

$$16) \frac{2x^{\frac{1}{4}} y^{\frac{1}{3}} \cdot 4x^2 y^{-\frac{1}{3}}}{3x^0 y^{\frac{1}{4}}}$$

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

1) $y^{\frac{1}{4}} \cdot x^{-\frac{3}{2}} y^2$

$$\frac{x^2 y^{\frac{9}{4}}}{x^2}$$

2) $4x^{\frac{3}{2}} y^{-\frac{1}{2}} \cdot 4y$

$$16y^{\frac{1}{2}} x^2$$

3) $3u^{-2} v^{-\frac{1}{4}} \cdot 3u^{-3} v^{\frac{5}{4}}$

$$\frac{9v}{u^5}$$

4) $4a^{\frac{1}{4}} \cdot 3a^{\frac{1}{4}} b^{\frac{5}{3}}$

$$12a^{\frac{1}{2}} b^{\frac{5}{3}}$$

5) $\left(a^0 b^{-\frac{3}{2}}\right)^{\frac{1}{2}}$

$$\frac{b^{\frac{1}{4}}}{b}$$

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

$$x^{\frac{1}{2}}$$

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

$$\frac{x^{\frac{2}{3}}}{y}$$

8) $\left(u^{\frac{3}{2}} v^{\frac{5}{3}}\right)^{\frac{1}{3}}$

$$u^{\frac{1}{2}} v^{\frac{5}{9}}$$

$$9) \frac{x^{-\frac{3}{2}} y^2}{3x^{\frac{3}{2}} y^{\frac{1}{2}}}$$

$$\frac{y^{\frac{3}{2}}}{3x^3}$$

$$10) \frac{2x^2 y^{-1}}{x^2 y^{\frac{2}{3}}}$$

$$\frac{2y^{\frac{1}{3}}}{y^2}$$

$$11) \frac{3a^{-2} b^{-2}}{b^{\frac{1}{4}}}$$

$$\frac{3b^{\frac{3}{4}}}{a^2 b^3}$$

$$12) \frac{x^{\frac{1}{2}} y^{-1}}{3y}$$

$$\frac{x^{\frac{1}{2}}}{3y^2}$$

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

$$2y^{\frac{5}{2}} x^{\frac{7}{2}}$$

$$14) \frac{4y^{-2} \cdot 3x^{\frac{5}{3}}}{3x^0}$$

$$\frac{4x^{\frac{5}{3}}}{y^2}$$

$$15) \frac{4u^{-\frac{3}{2}} v^{-2} \cdot 4vu^2}{3u^{\frac{1}{3}} v^{\frac{5}{4}}}$$

$$\frac{16u^{\frac{1}{6}} v^{\frac{3}{4}}}{3v^3}$$

$$16) \frac{2x^{\frac{1}{4}} y^{\frac{1}{3}} \cdot 4x^2 y^{-\frac{1}{3}}}{3x^0 y^{\frac{1}{4}}}$$

$$\frac{8x^{\frac{9}{4}} y^{\frac{3}{4}}}{3y}$$