Name: ----------

Date: ---------- Score: ----------

MATH MONKS

Simplifying Expressions with Rational Exponents

Simplify. Express your answer as positive exponents

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

2 $\dfrac{(2p^{\frac{2}{3}})^{3}}{(8p^{\frac{1}{6}})^{2}}$

3 $(-32y^{10})^{\frac{1}{5}}$

4 $\dfrac{3x^{\frac{1}{2}}\cdot 3x^{\frac{1}{2}}\cdot y^{-\frac{1}{3}}}{3y^{-\frac{7}{4}}}$

5 $\dfrac{a^{\frac{3}{4}}b^{-1}\cdot b^{\frac{7}{4}}}{3b^{-1}}$

6 $\dfrac{(xy^{2})^{\frac{1}{2}}}{x^{-\frac{1}{4}}y^{2}}$

7 $\dfrac{(y^{-\frac{1}{2}})^{\frac{3}{2}}}{x^{\frac{3}{2}}y^{\frac{1}{2}}}$

8 $\dfrac{3y^{\frac{1}{4}}}{4x^{-\frac{2}{3}}\cdot y^{\frac{3}{2}}\cdot 3y^{\frac{1}{2}}}$

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MATH MONKS

Simplifying Expressions with Rational Exponents

Answers

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

$\dfrac{a^{\frac{11}{4}}}{b^{5}}$

2 $\dfrac{(2p^{\frac{2}{3}})^{3}}{(8p^{\frac{1}{6}})^{2}}$

$\dfrac{p^{\frac{5}{8}}}{8}$

3 $(-32y^{10})^{\frac{1}{5}}$

$-2y^{2}$

4 $\dfrac{3x^{\frac{1}{2}}\cdot 3x^{\frac{1}{2}}\cdot y^{-\frac{1}{3}}}{3y^{-\frac{7}{4}}}$

$3xy^{\frac{17}{12}}$

5 $\dfrac{a^{\frac{3}{4}}b^{-1}\cdot b^{\frac{7}{4}}}{3b^{-1}}$

$\dfrac{a^{\frac{3}{4}}b^{\frac{7}{4}}}{3}$

6 $\dfrac{(xy^{2})^{\frac{1}{2}}}{x^{-\frac{1}{4}}y^{2}}$

$\dfrac{x^{\frac{3}{4}}}{y}$

7 $\dfrac{(y^{-\frac{1}{2}})^{\frac{3}{2}}}{x^{\frac{3}{2}}y^{\frac{1}{2}}}$

$\dfrac{1}{y^{\frac{5}{4}}x^{\frac{3}{2}}}$

8 $\dfrac{3y^{\frac{1}{4}}}{4x^{-\frac{2}{3}}\cdot y^{\frac{3}{2}}\cdot 3y^{\frac{1}{2}}}$

$\dfrac{x^{\frac{2}{3}}}{4y^{\frac{7}{4}}}$