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

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

MATH MONKS

Simplifying Rational Exponents

Simplify. Your answer should contain only positive exponents

1. $(x^{\frac{1}{2}}y^{\frac{1}{2}})^{-1}$

2. $(a \cdot ab^2)^0$

3. $(81m^6)^{\frac{1}{2}}$

4. $(64n^{12})^{-\frac{1}{6}}$

5. $\dfrac{(2x)^{-\frac{7}{4}}}{(4x)^{\frac{4}{3}}}$

6. $\dfrac{(x^3y^2)^{\frac{3}{2}}}{(x^{-1}y^{-\frac{2}{3}})^{\frac{1}{4}}}$

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

8. $\dfrac{2x^{-2}y^{\frac{5}{3}}}{x^{-\frac{5}{4}}y^{-\frac{5}{3}} \cdot xy^{\frac{1}{2}}}$

9. $\dfrac{(x^{-\frac{4}{3}}y^{-\frac{1}{3}} \cdot y)^{-1}}{x^{\frac{1}{3}}y^{-2}}$

10. $\left(\dfrac{x^{\frac{1}{2}} \cdot y^{-2}}{yx^{-\frac{7}{4}}}\right)^4$

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MATH MONKS

Simplifying Rational Exponents

Answers

1. $(x^{\frac{1}{2}}y^{\frac{1}{2}})^{-1}$

$\frac{1}{(xy)^{\frac{1}{2}}}$

2. $(a \cdot ab^2)^0$

1

3. $(81m^6)^{\frac{1}{2}}$

$9m^3$

4. $(64n^{12})^{-\frac{1}{6}}$

$2n^2$

5. $\frac{(2x)^{-\frac{7}{4}}}{(4x)^{\frac{4}{3}}}$

$\frac{1}{(2x)^{\frac{4}{3}}} \cdot \frac{1}{(2x)^{\frac{7}{4}}}$

6. $\frac{(x^3y^2)^{\frac{3}{2}}}{(x^{-1}y^{-\frac{2}{3}})^{\frac{1}{4}}}$

$x^{\frac{19}{4}}y^{\frac{19}{6}}$

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

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

8. $\frac{2x^{-2}y^{\frac{5}{3}}}{x^{-\frac{5}{4}}y^{-\frac{5}{3}} \cdot xy^{\frac{1}{2}}}$

$\frac{2y^2y^{\frac{5}{6}}}{x^{\frac{7}{4}}}$

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

$xy(y)^{\frac{1}{3}}$

10. $\left(\frac{x^{\frac{1}{2}} \cdot y^{-2}}{yx^{-\frac{7}{4}}}\right)^4$

$\frac{x^9}{y^{12}}$