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

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

MATH MONKS

Rational Exponents

Practice Worksheet

Write each expression in radical form

1. $(6a)^{-\frac{4}{3}}$
2. $(10p)^{-\frac{3}{4}}$
3. $4^{\frac{1}{6}}$

Write each expression in exponential form

4. $\frac{1}{(\sqrt[4]{n})^7}$
5. $\sqrt{6y}$
6. $\frac{1}{(\sqrt{6x})^3}$

Simplify. Your answer should contain only positive exponents

7. $\frac{x^2y^0}{3x^4}$
8. $(x^0y)^{\frac{3}{2}}x^0$
9. $4x^{\frac{2}{3}}.x^{-1}$
10. $\frac{4x^2}{2x^{\frac{1}{2}}}$
11. $(s\,.\,s^{-2}p^{\frac{5}{3}})^2$
12. $\left(\frac{a^{\frac{1}{2}}b^{-2}}{ba^{-\frac{7}{4}}}\right)^4$

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Answers

1. $(6a)^{-\frac{4}{3}}$

$\frac{1}{\sqrt[3]{(6a)^4}}$

2. $(10p)^{-\frac{3}{4}}$

$\frac{1}{\sqrt[4]{(10p)^3}}$

3. $4^{\frac{1}{6}}$

$\sqrt[6]{4}$

4. $\frac{1}{(\sqrt[4]{n})^7}$

$\frac{1}{n^{\frac{7}{4}}}$

5. $\sqrt{6y}$

$(6y)^{\frac{1}{2}}$

6. $\frac{1}{(\sqrt{6x})^3}$

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

7. $\frac{x^2y^0}{3x^4}$

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

8. $(x^0y)^{\frac{3}{2}}x^0$

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

9. $4x^{\frac{2}{3}}.x^{-1}$

$\frac{4}{x^{\frac{1}{3}}}$

10. $\frac{4x^2}{2x^{\frac{1}{2}}}$

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

11. $(s\,.\,s^{-2}p^{\frac{5}{3}})^2$

$\frac{p^{\frac{10}{3}}}{s^2}$

12. $\left(\frac{a^{\frac{1}{2}}b^{-2}}{ba^{-\frac{7}{4}}}\right)^4$

$\frac{a^{\frac{9}{4}}}{b^3}$