

I can extend the properties of exponents to rational exponents.

When working with rational exponents,

Recall:

$$\frac{1}{4} + \frac{5}{6} =$$

$$\frac{1}{4} \cdot \frac{5}{6}$$

Simplify.

$$1. a^{\frac{3}{2}} \cdot a^{\frac{5}{2}}$$

$$2. \left(x^{\frac{4}{5}}\right)^2$$

$$3. \frac{5x^{\frac{4}{7}}}{\frac{1}{x^7}}$$

$$4. y \cdot y^{\frac{8}{9}}$$

$$5. \frac{m^{\frac{2}{5}}}{\frac{7}{m^{10}}}$$

$$6. (xy^4)^{\frac{1}{2}} \cdot x^{\frac{1}{2}}$$

$$7. \left(\frac{a^{\frac{5}{8}}b^{\frac{1}{4}}}{a^{\frac{3}{8}}}\right)^2$$

I can extend the properties of exponents to rational exponents.

**Try these on your own:** Simplify the expression.

Reminder: No negative exponents, evaluate any number and reduce the fraction if possible

1.  $a^{5/7} \cdot a^{1/7}$

2.  $(xy^{3/2})^2$

3.  $x^{1/3} \cdot x^{5/6}$

4.  $\frac{c^{1/2}}{c^{1/6}}$

5.  $(a^{2/3}b^8)^{3/4}$

6.  $6m^{2/3} \cdot m^{3/4}$

7.  $(z^{2/9})^0$

8.  $\frac{p^{3/10}}{p^{7/10}}$

9.  $a^{2/5}b^{-1/3}$

10.  $x \cdot x^{1/2} \cdot x^{-3/4}$

11.  $\frac{y}{y^{2/5}}$

12.  $\left(\frac{a^{5/2}}{b^{10}}\right)^{3/5}$

13.  $(x^5y^{10}z)^{7/5}$

14.  $\frac{a^{-5/6}}{a^{1/6}}$

15.  $\frac{a^{2/3}b^{5/6}}{a^{1/9}b^{3/5}}$