

# Simplifying Exponents & Radicals Interactive Worksheet

1. Write each of the following in radical form:

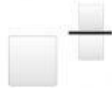
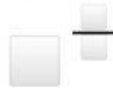
a.  $3^{\frac{1}{2}}$       b.  $(-3)^{\frac{2}{3}}$       c.  $-(5)^{\frac{5}{3}}$



$$\sqrt[d]{x^n} = x^{\frac{n}{d}}$$

2. Write each of the following in exponential form:

a.  $\sqrt{15}$       b.  $\sqrt[5]{2}$       c.  $\sqrt[4]{6^3}$



$$x^m \cdot x^n = x^{m+n}$$

3. Write as a single positive power and then evaluate:

a.  $(-2)^3 \times (-2)^4$       b.  $3^8 \div 3^4$       c.  $(2^3)^2$

=      =      =

=   =   =

=  =  =

$$\frac{x^m}{x^n} = x^m \div x^n = x^m$$

$$(x^m)^n = x^{m \cdot n}$$

d.  $(-2)^5 \div (-2)^3 - (-2)^2$

e.  $\frac{(3^2)^2 \times 3^{-2}}{2 + 2^0}$

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$$x^0 = 1$$

**4. Simplify**

$$4\sqrt{98} = 4\sqrt{\quad} \times \sqrt{\quad} = 4 \cdot \boxed{\quad}\sqrt{\quad} = \boxed{\quad}\sqrt{\quad}$$

$$x^{-m} = \frac{1}{x^m} = \left(\frac{1}{x}\right)^m$$