

## Unit 2 Extra Practice

1. Simplify, using the exponent laws, then evaluate. Give your final answer as an integer or fraction.

a.  $4^{-3} \div 4^{-2}$

b.  $3^{-2} \times 3^5 \times 3^{-2}$

c.  $(5^{-2})^{-1}$

d.  $[(10^{-3})(10^0)]^{-1}$

e.  $\frac{6^{-3} \times 6^2}{(6^4)^{-2}}$

f.  $\frac{2^7 \times 2^{-9}}{(2^{-4})^{-3}}$

2. Simplify. Write your answer as a power with a positive exponent.

a.  $(x^2)(x^{-6})(x^4)$

b.  $\frac{w^{-2}}{w^0}$

c.  $(ab^3)^{-2}$

d.  $\left(\frac{uv^4}{u^4v}\right)^{-1}$

e.  $\frac{p^{-4}q^3}{p^2q^{-2}}$

f.  $(x^{-1}y^2) \div (x^{-4}y^{-3})$

3. Evaluate, if possible. If not possible, explain why.

a.  $\sqrt[3]{-8}$

b.  $\sqrt[4]{625}$

c.  $\sqrt[5]{243}$

d.  $27^{\frac{4}{3}}$

e.  $(-1)^{\frac{7}{8}}$

f.  $\left(\frac{8}{125}\right)^{\frac{2}{3}}$

4. Express in radical form, then evaluate, if possible. If not possible, explain why.

a.  $81^{\frac{1}{2}}$

b.  $81^{\frac{1}{4}}$

c.  $(-125)^{\frac{2}{3}}$

d.  $100^{\frac{3}{2}}$

e.  $(-36)^{\frac{1}{2}}$

f.  $(-27)^{\frac{5}{3}}$

5. Write each power as a power with base 9.

a.  $81^3$

b.  $3^4$

c.  $27^6$

d.  $18^0$

e.  $\frac{1}{9^3}$

f.  $3^{-10}$