

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Learning Goal 0.2**

Expectations for algebra from previous years.

**Recall** all the exponent laws

$$x^a \times x^b$$

$$\frac{x^a}{x^b}$$

$$(x^a)^b$$

$$x^{-a}$$

$$x^{a/b}$$

**Example** Simplify the following expressions.

a.  $(64p^5q^9)^{4/3}$

b.  $\frac{(9a^3b^6)^{-1/2}}{(3a^3b^6)^{-2}}$

**Example** Rationalize the following expressions.

a.  $\frac{5\sqrt{8} - 2\sqrt{5}}{\sqrt{6}}$

b.  $\frac{1 + \sqrt{7}}{2 - \sqrt{7}}$

c.  $\frac{1}{\sqrt{5}} - \frac{1}{\sqrt{3}}$

d.  $\sqrt{x+2} - \sqrt{x+1}$

**Example** Simplify the following radical expressions.

c.  $\frac{\sqrt[3]{56x^9}}{\sqrt[3]{-7x^3}}$

d.  $\frac{1 + \sqrt{7}}{2 - \sqrt{7}}$

e.  $\frac{1}{\sqrt{5}} - \frac{1}{\sqrt{3}}$

f.  $\sqrt{x+2} - \sqrt{x+1}$