## Mat 103 Quiz 2 Review

Name: _____

Please show all your work to ensure full credit.

1. Fill the table below.

| Example | Base | Exponent | English words as spoken out loud | Expanded form | Evaluate |
|---|---|---|---|---|---|
| $-2^2$ | | | | | |
| $(-2)^2$ | | | | | |
| $(-2)^{-2}$ | | | | | |
| $-\frac{1}{2^{-2}}$ | | | | | |

2. Fill in the empty columns below.

| Exponential Notation | Radical Notation |
|---|---|
| $b^{\frac{1}{3}}$ | |
| | $\sqrt[4]{b}$ |
| $b^{-\frac{1}{5}}$ | |

3. Evaluate the following. Your final answer should be without a radical. Assume all variables are nonzero positive real numbers.

   a. $\sqrt{81a^{12}b^6}$

   b. $\sqrt[3]{\frac{-8x^{12}}{y^6}}$

   c. $\sqrt{8a^{15}b^7}$

4. Fill in the blanks below if possible. If it is impossible to fill in the blanks, explain why.

a.

$$\frac{1}{\sqrt{\square}} = x^2$$

b.

$$\sqrt[3]{\square^{\square}} = y^2$$

c.

$$\left(\frac{\square}{\square}\right)^{-2} = -4$$

d.

$$\sqrt{\left(\frac{\square}{\square}\right)} = -2$$