

Name Key
 Mrs. Roumbos

Date _____
 8R Period _____

Homework

I. Write the following in exponential form:

$$1) 2 \cdot 2 \cdot 2 \cdot 2 = \boxed{2^4}$$

$$2) 4 \cdot 4 \cdot 4 \cdot 5 \cdot 5 = \boxed{4^3 \cdot 5^2}$$

$$3) \text{yyyyyyyyy} =$$

$$\boxed{y^9}$$

$$4) \text{mmmllll} = \boxed{m^3 \cdot l^4}$$

II. Write the following in ~~exponential~~ ^{expanded} form and then solve:

$$5) 3^5 = 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 =$$

$$\boxed{243}$$

$$6) 2^4 \cdot 3^2 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3$$

$$\boxed{144}$$

$$7) 3^3 \cdot 4^2 =$$

$$3 \cdot 3 \cdot 3 \cdot 4 \cdot 4 =$$

$$\boxed{432}$$

$$8) x^3 = x \cdot x \cdot x = \boxed{x^3}$$

III. Simplify the following:

$$9) 6^0 = \boxed{1}$$

$$10) 5^{-2} = \frac{1}{5^2} = \boxed{\frac{1}{25}}$$

$$11) n^{-4} = \boxed{\frac{1}{n^4}}$$

$$12) (3x)^0 = \boxed{1}$$

$$13) 2^{-4} = \frac{1}{2^4} = \boxed{\frac{1}{16}}$$

$$14) (-4)^{-3} = \frac{1}{(-4)^3} = \boxed{-\frac{1}{64}}$$

$$15) x^{-5} = \boxed{\frac{1}{x^5}}$$

$$16) 2^{-3} = \frac{1}{2^3} = \boxed{\frac{1}{8}}$$

$$17) b^0 = \boxed{1}$$