ALG III Name:_____
5.1-5.3 Review

1. Use the properties of exponents to determine whether the following statements are true or false. If a statement is false, rewrite the right side of the equation to make a true a statement.

a. $\frac{3^{10}}{3^4} = 3^{25}$ b. $(3x)^3 = 9x^3$

2. Use properties of exponents to simplify each expression. Circle your answers.

a. $\left(\frac{1}{2}\right)^3$ b. $4^2 \bullet 4^5$ c. $7^{-2}$

d. $\left(\frac{3}{4}\right)^{-1}$ e. $\left(2^2\right)^3$ f. $(2 \bullet 3)^2$

g. $x^{-1}y^2$ h. $x^2y^{-1}$ i. $\left(x^2\right)^3$

j. $\left(\frac{x}{3}\right)^2$ k. $\left(\frac{2}{y}\right)^{-3}$ l. $\frac{x^8}{x^2}$

m. $\frac{2^5x^7}{2^4x^4}$ n. $\frac{2x^3(yx^2)^{-1}}{4x^7}$ o. $\frac{\left(2x^5\right)^3}{3x^7}$

3. Write the polynomial in descending powers. State the degree.

a. $4x - 3x^3 + 8x^2$

b. $-38 - p^5 - 29p^3 + 47p$

4. If $f(x) = 3x^2 - 4x$ and $g(x) = -9x^2 + 9x - 8$

a. Find $(f+g)(3)$

b. Find $(f-g)(-2)$

c. Find $(f+g)(x)$

d. Find $(g-f)(x)$

e. Find $(g-f)(0)$

4. Given the graphs of $f(x)$ and $g(x)$, find:

a. $(f+g)(-2)$

b. $(f-g)(0)$

c. $(f-g)(2)$