MasterMath

Name _____

Exponential Properties Involving Products

Date _____

1. **Simplify these expressions**

Expression	Simplified
$g4 * g3$	
$(a^2)^3$	
$a^2 * a^3$	
$x^3 * (x^4)^2$	
$(ab)^2 * a$	
$(x^3y^2)^2$	
$(2x)^2*2x$	
$(3x^2y^4)(2x^2)^4$	
$s^2 * (2s^2)^4$	

2. **Which expression is equivalent to $(-9)^6$?**

a) $(-9)^2(-9)^3$

b) $(-9)(-9)^5$

c) $\{(-9)^4\}^2$

d) $[(-9)^3]^3$

3. **Which expression is equal to $49y^{12}$?**

a) $(49y^2)^6$

b) $(7y)^{12}$

c) $7y^3 * 7y^4$

d) $(7y^5)^2 * y^2$

4. **Find the missing exponent:**

Expression	Missing Exponent
$(x^4)^? = x^{20}$	
$(3a^3)^?* 2a^3 = 18a^9$	
$(2z^?)^3 = 8z^{15}$	

5. **Simplify the expression**

Expression	Simplified
(-3c3d)2(12c3d2)2	
$(-2c^2d)^2(11c^3d^4)^2$	
$-(-2x^2y^4)^2(xy^3)^3$	

6. **You own a microscope with an objective lens and an eyepiece. The objective lens can magnify an object 10^3 times, and the eyepiece can further magnify an object 10^2 times. The total magnification of the microscope is the power of the objective lens times the power of the eyepiece. What is the maximum magnification on your microscope?**

7. **There are $5^{1?}$ blades of grass in each acre of land, and a section of land has 5^* acres of land. How many blades of grass does the land have?**