Alg Sem 2
8.1-8.3 Quiz Review
KEY

* Evaluate the expression. Write your answer using exponents and as a simplified fraction. NO DECIMALS!

1. $5^{-5} \cdot 5^{8}$

5^{-5+8}

$\boxed{5^{3} \mid 125}$

2. 6^{-3}

$\boxed{\frac{1}{6^{3}} \mid \frac{1}{216}}$

3. $(3^{2})^{6}$

$3^{2 \cdot 6}$

$\boxed{3^{12} \mid 531441}$

4. $\frac{4^{50}}{4^{49}}$

4^{50-49}

$\boxed{4^{1} \mid 4}$

* Simplify the expression.

5. $(4^{0})(7x)$

$1(7x)$

$\boxed{7x}$

6. $(3xy^{2})^{3} \cdot (-3x^{2}y)^{2}$

$3^{3}x^{3}y^{6} \cdot (-3)^{2}x^{4}y^{2}$

$27x^{3}y^{6} \, 9x^{4}y^{2}$

$\boxed{243x^{7}y^{8}}$

* Tell whether the function represents exponential growth or exponential decay.

7. $y = 4^x$

exponential growth

8. $y = (\frac{1}{4})^x$

exponential decay

* Identify the growth or decay factor & the y-intercept of each exponential function.

9. $y = 4(\frac{1}{3})^x$

decay factor: $\frac{1}{3}$
y-int: (0, 4)

10. $y = 3(4)^x$

growth factor: 4
y-int: (0, 3)

* Graph the exponential function. Use a table!

11. $y = 3(\frac{1}{3})^x$

x	y
-2	27
-1	9
0	3
1	1
2	0.3