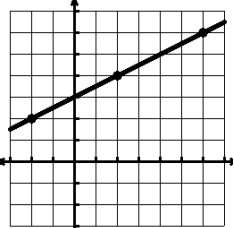
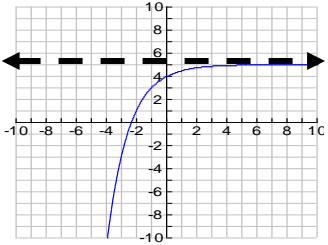
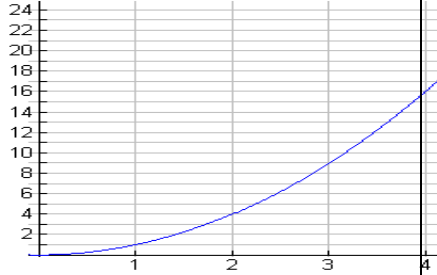
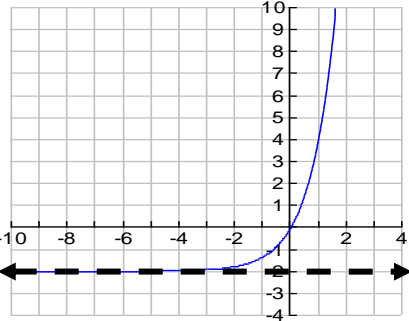


## Unit 3A Study Guide #2

Name: \_\_\_\_\_ Class Period: \_\_\_\_\_

**Use the following to review for you test. Work the Practice Problems on a separate sheet of paper.**

What you need to know & be able to do	Things to remember	Problem	Problem
Identify: <b>Function</b> or <b>Not a Function</b>  <b>EXPLAIN!!!!</b>	Graphs: Must pass the Vertical Line Test! Points: Inputs cannot repeat!	1. Function or Not a Function  	2. Function or Not a Function $\{(3,3),(4,3),(4,4),(6,5)\}$
<b>Combining Like Terms</b>	<ul style="list-style-type: none"> <li>• <u>Adding</u>: add the numbers, keep variable the same.</li> <li>• <u>Multiplying</u>: multiply the numbers, adds the exponents.</li> </ul>	3. $(8k + 3) + (k + 7)$	4. $-7(x^2 + 2) - (3x + 1)$
Given functions, <b>simplify</b> the expressions.	<ul style="list-style-type: none"> <li>• Choose the correct functions.</li> <li>• Pay attention to where the number is if there is one.</li> <li>• Combine Like Terms.</li> </ul>	$f(x) = x^2 + 3x - 5$ $g(x) = 2x^2 - x + 2$ $h(x) = 3x^3$ 5. $f(1) + g(-2)$	6. $g(x) - f(x)$  7. $h(x) \cdot f(x)$
<b>Evaluating</b> both Linear and Exponential Functions	<ul style="list-style-type: none"> <li>• SHOW WORK!</li> <li>• Plug it in.</li> </ul>	8. Given, $f(x) = x^2 + x - 4$  Find $f(-2) = \underline{\hspace{2cm}}$	9. $g(0) = \underline{\hspace{2cm}}$ 10. $g(\underline{\hspace{1cm}}) = 1$  

<p>Find the <b><u>average rate of change</u></b></p>	<ul style="list-style-type: none"> <li>• Rate of Change</li> <li>• Average Rate of Change</li> <li>• Slope</li> </ul>	<p>11. <math>(2, -3)</math> and <math>(-2, 8)</math></p>	<p>12. When <math>x_1 = 1</math> and <math>x_2 = 3</math></p> 
<p><b><u>Arithmetic Sequences</u></b></p>	<ul style="list-style-type: none"> <li>• <u>Adding</u> or <u>Subtracting</u> to get to the next term</li> <li>• <math>a_n = a_1 + d(n-1)</math></li> </ul>	<p>13. Write the <b><u>rule</u></b> for the following sequence and find the 50<sup>th</sup> term: 3, 6, 9, 12, 15, 18</p>	<p>14. Write the <b><u>rule</u></b> for the following sequence: 45, 41, 37, 33,</p>
<p><b><u>Geometric Sequences</u></b></p>	<ul style="list-style-type: none"> <li>• <u>Multiplying</u> or <u>dividing</u> to get to the next term</li> <li>• <math>a_n = a_1(r)^{n-1}</math></li> </ul>	<p>15. Write the <b><u>rule</u></b> for the following sequence and find the 6<sup>th</sup> term: 4, 12, 36, 108</p>	<p>16. Write the <b><u>rule</u></b> for the following sequence: 625, 125, 25, 5, 1</p>
<p><b><u>Characteristics of functions</u></b></p>	<ul style="list-style-type: none"> <li>• Domain</li> <li>• Range</li> <li>• Y-int</li> <li>• X-int</li> <li>• Inc/Dec</li> <li>• Asymptote</li> <li>• Rate of Change</li> </ul>	<p>17.</p> 	<p>Domain: _____</p> <p>Range: _____</p> <p>X-Int: _____ Y-Int: _____</p> <p>Inc or Dec</p> <p>Asymptote: _____</p> <p>RoC from <math>x = 0</math> to 1: _____</p>