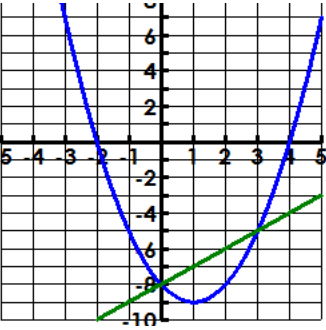
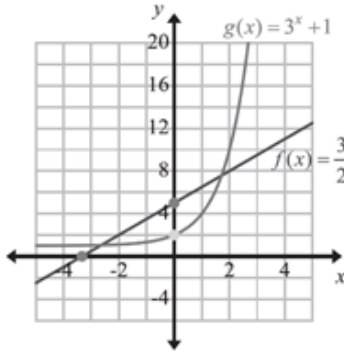


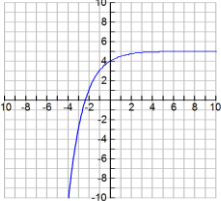
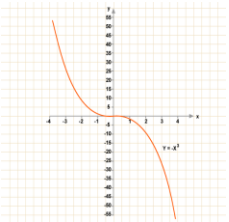
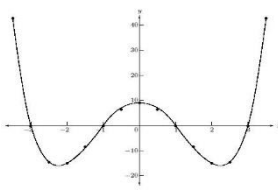
Name: \_\_\_\_\_

Date: \_\_\_\_\_

What you need to know & be able to do	Things to remember	Problem	
Transformations	Negative in front reflects across x-axis  Number in front stretches or shrinks  Number inside parenthesis moves left or right  Number alone moves up or down	Describe the transformations: $f(x) = -\frac{1}{3}(x+2)^2 + 1$	Describe the transformations: $f(x) = (2)^{x-4} + 3$
		3. Describe the transformations made to $f(x)$ to create the following functions.  $g(x) = \frac{1}{4}(x-2)^2 + 5$ a= _____ h= _____ k= _____	4. Write the equation of a quadratic that has a vertex at $(-5, -3)$ , opens up, and is stretched by a factor of 2.
Intersections	<p><b>Graphically:</b> See where the two intersect and list as ordered pairs.</p> <p><b>Algebraically:</b> Set the equations equal to each other and solve for x. Substitute each x back in and solve for y. List as ordered pairs.</p>	11. 	12. $y = x^2 - x - 6$ $y = 2x - 2$
Comparing Functions and Sequences	<ul style="list-style-type: none"> <li>Starting value= Function</li> <li>Linear <math>y = mx + b</math></li> <li>Exponential <math>y = ab^x</math></li> <li>First Time = Sequence</li> </ul>	1. Taylor and Jordan are competing to see who can run the most during a week. On Day 1, Taylor runs 3 miles then increases his mileage each day by 4 miles. On Day 1, Jonathan runs $\frac{1}{2}$ a mile and doubles his miles each day.  Write the rule for the sequence that represents how many miles each runner will run in terms of days.  <u>Taylor:</u>  <u>Jordan:</u>  Who will reach 10 miles first?	

	<ul style="list-style-type: none"> <li>• Arithmetic: <math>a_n = a_1 + d(n - 1)</math></li> <li>• Geometric: <math>a_n = a_1(r)^{n-1}</math></li> </ul>	<p>2. Two companies are offering memberships for buying music. iTunes offers a \$20 a month membership with a registration fee of \$100. Amazon offers a \$40 a month membership with a registration fee of \$60.</p> <p>Write an equation for each company.  <u>iTunes:</u>  <u>Amazon:</u></p> <p>Compare the rates of change and the y-intercepts.</p> <p>Which company is better if you only want 2 months? 12 months?</p>
--	---	--

<p>Characteristics of Functions</p>	<ul style="list-style-type: none"> <li>• Y-int (where it crosses the y-axis)</li> <li>• X-int (where it crosses the x-axis)</li> <li>• Rate of Change <math>m = \frac{y_2 - y_1}{x_2 - x_1}</math></li> </ul>		<p>f(x)</p>	<p>&lt;, &gt;, or =</p>	<p>g(x)</p>
			<p>ROC from x=0 to x=2</p>		<p>ROC from x=0 to x=2</p>
			<p>y-int</p>		<p>y-int</p>
			<p>f(3)</p>		<p>g(3)</p>

<p>Determine whether a function is even, odd, or neither</p>	<p>Graphically:</p> <ul style="list-style-type: none"> <li>• Even = Symmetric about the y-axis</li> <li>• Odd = 180 degree rotational symmetry + MUST go through origin (0,0)</li> </ul> <p>Algebraically:</p> <ul style="list-style-type: none"> <li>• Remember constants have <math>x^0</math> - EVEN</li> <li>• Even = all exponents are even</li> <li>• Odd = all exponents are odd</li> <li>• Neither = mix of even and odd exponents</li> </ul>	<p>Determine whether the function is even, odd or neither.</p>  <p>_____</p>  <p>_____</p>  <p>_____</p>	<p>Determine whether the function is even odd or neither.</p> <p><math>f(x) = 2x^3</math></p> <p><math>f(x) = -x^3 + x + 5</math></p> <p><math>f(x) = x^4 + 3x</math></p> <p><math>f(x) = x^2 - 9</math></p>
--	---	---	--

