

Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples	
<p><i>Function</i></p> <p>OPERATIONS</p>	<p>Functions can added, subtracted, multiplied, and divided to create new functions.</p>	
	<p>Example: If $f(x) = 3x - 7$ and $g(x) = 13 - 2x$, find $f(x) + g(x)$:</p>	
	<p>This new function is denoted as</p>	
<p>OPERATIONS</p> <p><i>Rules</i></p>	SUM	$(f + g)(x) =$
	DIFFERENCE	$(f - g)(x) =$
	PRODUCT	$(f \cdot g)(x) =$
	*QUOTIENT	$\left(\frac{f}{g}\right)(x) =$
<p>Functions:</p> <p>$f(x) = x^2 - 8x + 4$</p> <p>$g(x) = 4x - 3$</p> <p>$h(x) = x + 2$</p>	<p>Find each function using the functions given to the left. Indicate any restrictions in the domain.</p>	
	1. $(f + g)(x)$	2. $(f - h)(x)$
	3. $(h \cdot g)(x)$	4. $\left(\frac{f}{h}\right)(x)$
	5. $\left(\frac{h}{g}\right)(x)$	6. $(f \cdot g)(x)$

<p>Functions:</p> $f(x) = 2x^2 - x - 12$ $g(x) = x + 7$	Evaluate each function using the functions given to the left.	
	7. $(f + g)(-2)$	8. $(f - g)(8)$
	9. $(f \cdot g)(-1)$	10. $\left(\frac{f}{g}\right)(5)$
<p>COMPOSITIONS <i>of Functions</i></p>	<p>Another method to combine functions is called a composition. Given $f(x)$ and $g(x)$, the composite function $(f \circ g)(x)$ is defined as:</p> <div style="border: 1px solid black; height: 40px; width: 300px; margin: 10px auto;"></div>	
<p>Functions:</p> $f(x) = 5x - 3$ $g(x) = x - 1$ $h(x) = x^3 + 8$	Find each function value using the functions given to the left.	
	11. $(f \circ g)(x)$	12. $(g \circ h)(x)$
	13. $(h \circ g)(x)$	14. $(g \circ f)(x)$
	Using the same set of functions, evaluate each function.	
	15. $(g \circ f)(2)$	16. $(f \circ h)(-6)$