

Math 30C Outcome 10A Assessment 1

30.6	2	3	4
<p>Outcome 10a: I can demonstrate an understanding of operations on, and compositions of, functions.</p>	<p>I can write equations of a function that results from the sum, difference, product, quotient of two or more functions.</p>	<p>I can write an equation/function as a composition of two or more functions.</p> <p>I can sketch a function that is sum or difference of two given graphs.</p> <p>I can determine the domain and range for sums, differences, and composite functions.</p>	<p>I can explain strategies for determining $f(f(x))$, $f(g(x))$ and $g(f(x))$.</p> <p>I can sketch a function that is a product, quotient or composites of two given graphs.</p> <p>I made no errors.</p>

Level 2

1. Given that $f(x) = x + 1$ and $g(x) = 2x - 5$
 - a) Determine the equation of the function $h(x) = f(x) + g(x)$.

 - b) Determine $y = g(x) - f(x)$.

 - c) Determine $y = f(x)g(x)$.

 - d) Determine $y = \frac{g(x)}{f(x)}$.

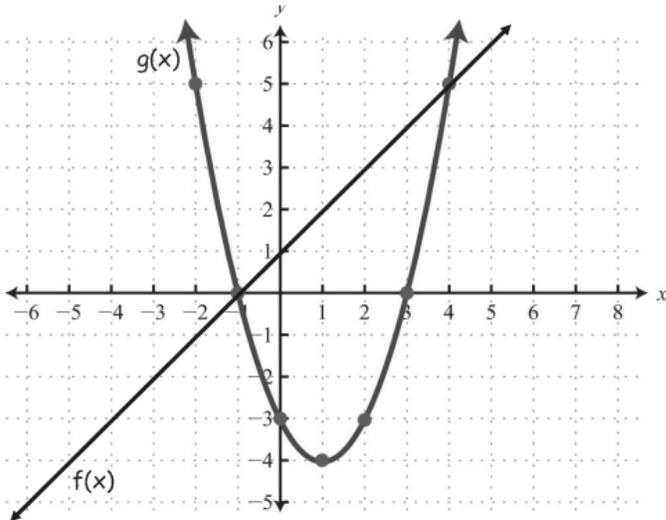
Level 3

2. Given $f(x) = x - 3$ and $g(x) = \sqrt{x}$
 - a) Determine the equation for $f(g(x))$

 - b) Determine the equation for $g(f(x))$.

3. Use the graphs of $y = f(x)$ and $y = g(x)$ to sketch the graph of each function. Identify the domain and range. Estimate the range, where necessary.

a) $y = f(x) + g(x)$



Domain:

Range:

Level 4

4. $f(g(x))$ is a composition of two different functions. If $f(g(x)) = \sqrt{x^2 + 2}$ show three different possible function combinations for $f(x)$ and $g(x)$ that would create this composition. You may not use $f(x) = x$ or $g(x) = x$ in your solutions.