

Directions: Begin in cell #1. Perform the operation(s) necessary to arrive at your answer. Show work! Circle your answer, then hunt for it and call it cell #2. Proceed in this manner until you complete the circuit. You should not need a calculator for this circuit. Attach extra sheets if necessary to show your best work.

<p>Answer: $t^2 + 6t$</p> <p># <u>1</u> If $f(x) = 3x^2 + 4x - 7$, then $f(-3) =$</p>	<p>Answer: $t^2 + 3t + 3$</p> <p># _____ $f(x) = 5x - 3$ $f(t + 2) = ?$</p>
<p>Answer: 0</p> <p># _____ Evaluate $(f \circ g)(2)$ given $f(2) = 3$ $g(3) = 7$ $g(2) = -5$ $f(-5) = 1$</p>	<p>Answer: 4</p> <p># _____ The expression $(f - g)(2)$ is the same as $f(2) - g(2)$. Evaluate $(f - g)(2)$ if $f(n) = -4n + 1$ and $g(n) = \frac{1}{2}n - 3$.</p>
<p>Answer: $t^2 + 2t + 1$</p> <p># _____ Given the linear function $p(x) = 3x + 2$ and the quadratic function $q(x) = x^2 + 1$, find $(p + q)(t)$.</p>	<p>Answer: -56</p> <p># _____ Determine $g(f(6))$ if $g(w) = 5w + w^2$ and $f(w) = -w + 2$.</p>
<p>Answer: 8</p> <p># _____ If $g(x) = \frac{x-5}{x+4}$, then $g(-3) =$</p>	<p>Answer: 12</p> <p># _____ Given the velocity function $v(t) = 3t^2 + t - 6$. Find $v(1 + t)$.</p>
<p>Answer: -5</p> <p># _____ Evaluate $v(1)$ for $v(t) = -16t^2 + 10t$.</p>	<p>Answer: -8</p> <p># _____ Given $f(x) = 2x + 1$ and $g(x) = -3x + 5$, find $f(2) + g(2)$.</p>

<p>Answer: - 18</p> <p># _____ Given $g(x) = x^2 - x$ and $h(x) = -2x + 1$ evaluate $4h(3) - 3g(4)$.</p>	<p>Answer: - 6</p> <p># _____ $g(x) = x^2 + 3x, f(x) = x - 2$, $\left(\frac{g}{f}\right)(4) =$</p>																		
<p>Answer: - 36</p> <p># _____ Select values for the functions $g(x)$ and $f(x)$ are given in the table below. Evaluate $(g \circ f)(-1)$.</p> <table><tr><td>x</td><td>- 2</td><td>- 1</td><td>0</td><td>1</td><td>2</td></tr><tr><td>$f(x)$</td><td>2</td><td>1</td><td>0</td><td>- 1</td><td>- 2</td></tr><tr><td>$g(x)$</td><td>9</td><td>4</td><td>1</td><td>0</td><td>1</td></tr></table>	x	- 2	- 1	0	1	2	$f(x)$	2	1	0	- 1	- 2	$g(x)$	9	4	1	0	1	<p>Answer: $3t^2 + 7t - 2$</p> <p># _____ Find the composite function, $(f \circ g)(t)$, for the linear functions $g(x) = -3x - 1$ and $f(x) = 6x + 4$.</p>
x	- 2	- 1	0	1	2														
$f(x)$	2	1	0	- 1	- 2														
$g(x)$	9	4	1	0	1														
<p>Answer: 15</p> <p># _____ $f(t) = t^2 - t$ and $g(t) = 4t + 1$ $(f \circ g)(-1) = ?$</p>	<p>Answer: - 4</p> <p># _____ If $f(x) = x^2 + 2x + 1$, then $f(t) = ?$</p>																		
<p>Answer: 14</p> <p># _____ $f(x) = x + 1$ $g(x) = x^2$ Find $(f \cdot g)(-3)$.</p>	<p>Answer: 1</p> <p># _____ Given $p(x) = x^2 - 3$, evaluate $p(t + 3) - p(3)$.</p>																		
<p>Answer: $-2 - 18t$</p> <p># _____ Evaluate $(3g + 3f)(5)$ for the functions $f(x) = 3 - x$ and $g(x) = -x^2 + 3x$.</p>	<p>Answer: $5t + 7$</p> <p># _____ Given the linear functions $h(x) = 2x - 3$ and $g(x) = 2x + 5$, find $(h \circ g)(2)$.</p>																		