

Name: _____ Per: _____ Date: _____

HW 1.1 – Day 3 – Compositions

1.) Given the following functions, perform each operation then state the domain of the result.

$$f(x) = x^2 - 7x - 30, \quad g(x) = x + 3,$$

<p>a.) $(f + g)(x)$</p> <p>Result: _____</p> <p>Domain: _____</p>	<p>b.) $(f - g)(x)$</p> <p>Result: _____</p> <p>Domain: _____</p>	<p>c.) $(fg)(x)$</p> <p>Result: _____</p> <p>Domain: _____</p>	<p>d.) $(\frac{f}{g})(x)$</p> <p>Result: _____</p> <p>Domain: _____</p>
--	--	---	--

Given the following functions below, perform each operation then state the domain of the result.

$$f(x) = x + 5, \quad g(x) = x^2 - 3x + 13, \quad h(x) = \sqrt{x - 2}, \quad j(x) = 2x + 9, \quad p(x) = x^2 - 6, \quad k(x) = \frac{1}{x}$$

<p>2. $(j \circ f)(x)$</p> <p>Result: _____</p> <p>Domain: _____</p>	<p>3. $(j \circ g)(x)$</p> <p>Result: _____</p> <p>Domain: _____</p>
<p>4. $(p \circ j)(x)$</p> <p>Result: _____</p> <p>Domain: _____</p>	<p>5. $(h \circ f)(x)$</p> <p>Result: _____</p> <p>Domain: _____</p>

<p>6. $(k \circ f)(x)$</p> <p>Result: _____</p> <p>Domain: _____</p>	<p>7. $(k \circ h)(x)$</p> <p>Result: _____</p> <p>Domain: _____</p>
---	---

Given the following functions below, perform each set of compositions.

$$f(x) = x + 5, \quad g(x) = x^2 - 3x + 13, \quad h(x) = \sqrt{x - 2}, \quad j(x) = 2x + 9, \quad p(x) = x^2 - 6, \quad k(x) = \frac{1}{x}$$

<p>8. $(j \circ h)(27)$</p> <p>Result: _____</p>	<p>9. $(g \circ p)(-4)$</p> <p>Result: _____</p>
<p>10. $(j \circ k)(2)$</p> <p>Result: _____</p>	<p>11. $(p \circ f)(-7)$</p> <p>Result: _____</p>
<p>12. $(g \circ g)(2)$</p> <p>Result: _____</p>	<p>13. $(g \circ f \circ j)(-5)$</p> <p>Result: _____</p>