

Section 6.1 answers

1a) $(f \circ g)(x) = 6x+24$ 1b) domain $(-\infty, \infty)$

1c) $(g \circ f)(x) = 6x-2$ 1d) domain $(-\infty, \infty)$

3a) $(f \circ g)(x) = 3(3x^2 - 8x + 7)$ 3b) domain $(-\infty, \infty)$

3c) $(g \circ f)(x) = 3x^2 + 11$ 3d) domain $(-\infty, \infty)$

5a) $(f \circ g)(x) = x^2 + 2x - 5$ 5b) domain $(-\infty, \infty)$

5c) $(g \circ f)(x) = x^2 - 6x + 7$ 5d) domain $(-\infty, \infty)$

7a) $(f \circ g)(x) = \frac{2(x-7)}{4x-25}$

7b) domain of $(f \circ g)(x)$ is all real numbers except 7 and 25/4.

7c) $(g \circ f)(x) = \frac{3(x+4)}{-7x-26}$

7d) domain of $(g \circ f)(x)$ is all real numbers except -4 and -26/7

9a) $(f \circ g)(x) = \frac{x}{-3x+1}$

9b) : domain of $(f \circ g)(x)$ is all real numbers except 0 and 1/3

9c) $(g \circ f)(x) = x-3$

9d) domain of $(g \circ f)(x)$ is all real numbers except 3

<p>11a) show $(f \circ g)(x) = x$</p> <p>$(f \circ g)(x) = f(g(x))$ $(f \circ g)(x) = 7(g(x)) + 1$</p> <p>$(f \circ g)(x) = 7\left(\frac{x-1}{7}\right) + 1$</p> <p>$= x - 1 + 1$</p> <p>$= x$</p>	<p>11b) show $(g \circ f)(x) = x$</p> <p>$(g \circ f)(x) = g(f(x))$</p> <p>$(g \circ f)(x) = \frac{g(x)-1}{7}$</p> <p>$(g \circ f)(x) = \frac{(7x+1)-1}{7} = \frac{7x+1-1}{7} = \frac{7x}{7} = x$</p>
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<p>13a) show $(f \circ g)(x) = x$</p> <p>$(f \circ g)(x) = \frac{g(x)-5}{2}$</p> <p>$(f \circ g)(x) = \frac{2x+5-5}{2} = \frac{2x}{2} = x$</p>	<p>13b) show $(g \circ f)(x) = x$</p> <p>$(g \circ f)(x) = 2(f(x)) + 5$</p> <p>$(g \circ f)(x) = 2\left(\frac{x-5}{2}\right) + 5 = x-5+5 = x$</p>
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