

Function Operations Worksheet C

1. Given: $f(x) = 3x^2 + 2$, $g(x) = x - 6$ and $h(x) = -x^2 - 2x + 3$ find each of the following.

- a. $-2f(3)$ b. $f(g(x))$ c. $(h \circ g)(x)$
d. $f(h(g(7)))$ e. $h(x+2)$ f. $h(f(x))$

2. Given: $f(x) = 4x - 5$, $g(x) = 2x^3 + 1$ and $h(x) = \sqrt{x} - 3$ find each of the following.

- a. $f(4) + g(-2)$ b. $h(27x^6)$ c. $-3f(x) + 2g(x)$
d. $f(x) - g(x)$ e. $g(x+2)$ f. $(f \circ h)(x)$

3. Given $f(x) = x^2 + 6$, $g(x) = x - 3$ and $h(x) = 2x^2 - 5x + 7$ find each of the following.

- a. $h(g(x))$ b. $f(x+5) + g(3x-2)$ c. $(h \circ g)(4)$
d. $f(g(h(4)))$ e. $f(x-3) - f(x+6)$ f. $h(f(x))$

4. Given $f(x) = 3x^3 - 6$, $g(x) = 3x^2 - 4x$ and $h(x) = x^2 - 3x + 12$ find each of the following.

- a. $f(-3) - g(8)$ b. $h(x) + g(x)$ c. $h(4) - h(2)$
d. $f(3) + g(-2) - h(3)$ e. $f(x-4)$ f. $h(g(3)) + f(g(2))$

5. Given $f(x) = 2x^2 - 3$, $g(x) = 5x + 2$ and $h(x) = -x^2 + 1$ find each of the following.

- a. $f(x) \circ g(x)$ b. $3f(x) - 2h(x) + g(x)$ c. $f(7-x)$
d. $f(x-3) - h(x+2)$ e. $f(g(h(-2)))$ f. $f(-h(x))$