

### COMPOSITE FUNCTION WORKSHEET

**Directions:** Show all work for credit. Work must be neat and answer must be circled.

**For 1- 9: Let  $f(x) = 2x - 1$ ,  $g(x) = 3x$ , and  $h(x) = x^2 + 1$ . Compute the following:**

1.  $f(g(-3))$

2.  $f(h(7))$

3.  $(g \circ h)(24)$

4.  $f(g(h(2)))$

5.  $h(g(f(5)))$

6.  $g(f(h(-6)))$

7.  $f(x + 1)$

8.  $g(3a)$

9.  $h(x - 2)$

**For 10-11: Let  $f(x) = -3x + 7$  and  $g(x) = 2x^2 - 8$ . Compute the following:**

10.  $f(g(x))$

11.  $(g \circ f)(x)$

12. If  $f(x) = 3x - 5$  and  $g(x) = x^2$ ,  
find  $(f \circ g)(3)$

13. If  $f(x) = -9x - 9$  and  $g(x) = \sqrt{x - 9}$ ,  
find  $(f \circ g)(10)$

14. If  $f(x) = -4x + 2$  and  $g(x) = \sqrt{x-8}$ ,  
find  $(f \circ g)(12)$

15. If  $f(x) = -3x + 4$  and  $g(x) = x^2$ ,  
find  $(g \circ f)(-2)$

16. If  $f(x) = -2x + 1$  and  $g(x) = \sqrt{x^2 - 5}$ ,  
find  $(g \circ f)(2)$

17. Given  $f(x) = -9x + 3$  and  $g(x) = x^4$ ,  
find  $(f \circ g)(x)$

18. Given  $f(x) = 2x - 5$  and  $g(x) = x + 2$ ,  
find  $(f \circ g)(x)$

19. Given  $f(x) = x^2 + 7$  and  $g(x) = x - 3$ ,  
find  $(f \circ g)(x)$

20. Given  $f(x) = 4x + 3$  and  $g(x) = x^2$ ,  
find  $(g \circ f)(x)$

21. Given  $f(x) = x - 1$  and  $g(x) = x^2 + 2x - 8$ ,  
find  $(g \circ f)(x)$