

# Composite Functions

Name :

Date :

- 1) Given the functions  $g(x) = 3x + 2$  and  $h(x) = 3x + 7$ , find an expression for  $gh(x)$ .
  
- 2) Given the functions  $f: x \rightarrow 3x - 4$  and  $h: x \rightarrow 5x - 3$ , find an expression for  $hf(x)$ .
  
- 3) Given the functions  $f(x) = 4x + 6$ ,  $g(x) = 5x + 3$  and  $h(x) = x^2 + 3$ , find an expression for  $gh(x)$ .
  
- 4) Given the functions  $f: x \rightarrow 4x - 7$ ,  $g: x \rightarrow 3x^2 - 4$  and  $h: x \rightarrow x - 8$ , find an expression for  $hg(x)$ .
  
- 5) Given the functions  $f(x) = 2x + 6$ ,  $g(x) = 2x^2 + 4$  and  $h(x) = 2x + 4$ , find an expression for  $gf(x)$ .
  
- 6) Given the functions  $f(x) = 2x - 1$ ,  $g(x) = 4x - 3$  and  $h(x) = 4x^2 - 2$ , find an expression for  $hg(x)$ .
  
- 7) Given the functions  $f: x \rightarrow x - 7$  and  $h: x \rightarrow x - 5$ , find the value of  $fh(4)$ .
  
- 8) Given the functions  $f(x) = 4x + 9$  and  $h(x) = x - 1$ , find the value of  $hf(-8)$ .

9) Given the functions  $f: x \rightarrow 2x - 2$  and  $g: x \rightarrow 2x^2 - 4$ , find the value of  $fg(1)$ .

10) Given the functions  $g(x) = 2x^2 + 6$  and  $h(x) = 6x - 1$ , find the value of  $hg(-1)$ .

11) Given the function  $f: x \rightarrow 2x - 4$ , find an expression for  $ff(x)$ .

12) Given the function  $f: x \rightarrow -4x - 8$ , find an expression for  $ff(x)$ .

## Solutions for the assessment Functions - Composite

1)  $gh(x) = 9x + 23$

3)  $gh(x) = 5x^2 + 18$

5)  $gf(x) = 8x^2 + 48x + 76$

7) -8

9) -6

11)  $ff(x) = 4x - 12$

2)  $hf(x) = 15x - 23$

4)  $hg(x) = 3x^2 - 12$

6)  $hg(x) = 64x^2 - 96x + 34$

8) -24

10) 47

12)  $ff(x) = 16x + 24$