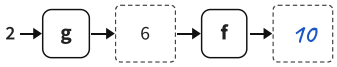
Composite Functions

ANSWERS

1

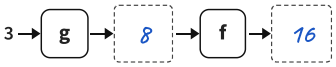
$f(x) = x + 4$ and $g(x) = 3x$. Put 2 into g, then put the output into f.



Answer 10

2

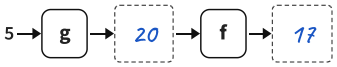
$f(x) = 2x$ and $g(x) = x + 5$. Put 3 into g, then put the output into f.



Answer 16

3

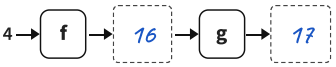
$f(x) = x - 3$ and $g(x) = 4x$. Put 5 into g, then put the output into f.



Answer 17

4

$f(x) = x^2$ and $g(x) = x + 1$. Put 4 into f, then put the output into g.



Answer 17

5

$f(x) = 2x + 1$ and $g(x) = x + 3$. Find fg(2).

g(2) = 5

f(5) = 11

Answer 11

6

$f(x) = 5x$ and $g(x) = x - 1$. Find fg(4).

g(4) = 3

f(3) = 15

Answer 15

7

$f(x) = x + 6$ and $g(x) = 3x$. Find gf(2).

f(2) = 8

g(8) = 24

Answer 24

8

$f(x) = x^2$ and $g(x) = 2x - 1$. Find fg(3).

g(3) = 5

f(5) = 25

Answer 25

Composite Functions *further practice*

ANSWERS

9

$f(x) = 3x - 2$ and $g(x) = x + 4$. Find fg(1).

g(1) = 5

f(5) = 13

Answer 13

10

$f(x) = x^2 + 1$ and $g(x) = x - 3$. Find gf(2).

f(2) = 5

g(5) = 2

Answer 2

11

$f(x) = 2x$ and $g(x) = x + 7$.
Find fg(3) and gf(3).
Does the order matter?

fg(3) = f(10) = 20

gf(3) = g(6) = 13

Answer 20 and 13: yes

12

A phone case costs £30. In a sale, $f(x) = x - 4$ takes £4 off and $g(x) = \frac{x}{2}$ halves the price. Find fg(30) and gf(30). Which order is cheaper?

fg(30) = f(15) = 11

gf(30) = g(26) = 13

Answer fg: £11, not £13

13

$f(x) = 2x + 1$. Find ff(3).

f(3) = 7

f(7) = 15

Answer 15

14

A bank takes a £5 fee, $g(x) = x - 5$, then changes pounds to euros, $f(x) = 1.2x$. Find fg(105). What does it tell you?

g(105) = 100

f(100) = 120

Answer £105 gives €120

15

$f(x) = x + 5$ and $g(x) = 2x$. Find fg(x).

g(x) = $2x$

f($2x$) = $2x$ + 5

Answer $2x$ + 5

16

$f(x) = 2x$ and $g(x) = x + 5$.
Mia writes: f(4) = 8, g(8) = 13, so fg(4) = 13. Explain her mistake and find fg(4).

g goes first: g(4) = 9

f(9) = 18

Answer 18