

Composite and Inverse Functions *fluency*

Work out

1 $f(x) = 2x + 1, g(x) = x^2$
Find $fg(3)$

3 $f(x) = x^2, g(x) = x + 2$
Find $fg(-5)$

5 $f(x) = x + 9, g(x) = 4x + 6$
Find $fg(2)$

2 $f(x) = x - 4, g(x) = 3x$
Find $fg(5)$

4 $f(x) = 5x, g(x) = x - 7$
Find $fg(2)$

6 $f(x) = x^2 + 1, g(x) = 2x$
Find $fg(-1)$

Work out

7 $f(x) = 2x + 1, g(x) = x^2$
Find $gf(3)$

9 $f(x) = x^2, g(x) = x + 2$
Find $gf(-5)$

11 $f(x) = 3x - 1, g(x) = x - 8$
Find $gf(3)$

8 $f(x) = x - 4, g(x) = 3x$
Find $gf(5)$

10 $f(x) = 5x, g(x) = x - 7$
Find $gf(3)$

12 $f(x) = x^2 - 3, g(x) = 10 - x$
Find $gf(4)$

Find $fg(x)$. Simplify your answer.

13 $f(x) = 2x + 1, g(x) = x + 3$

15 $f(x) = x - 5, g(x) = 2x + 1$

17 $f(x) = x^2, g(x) = x + 1$

14 $f(x) = 3x, g(x) = x - 4$

16 $f(x) = 4x + 2, g(x) = \frac{x}{2}$

18 $f(x) = 2x - 3, g(x) = x^2$

Find $f^{-1}(x)$

19 $f(x) = 3x - 4$

21 $f(x) = 5x$

23 $f(x) = 4 - x$

20 $f(x) = x + 7$

22 $f(x) = \frac{x}{2} + 3$

24 $f(x) = 2(x + 5)$

Find $f^{-1}(x)$

25 $f(x) = \frac{2x + 1}{5}$

27 $f(x) = \frac{3}{x} - 2$

29 $f(x) = \frac{x}{x - 1}$

26 $f(x) = \frac{x - 3}{4}$

28 $f(x) = \frac{1}{x + 4}$

30 $f(x) = \frac{2x}{x + 3}$