

Composite Functions

Maths

Mrs Dennett



Composite Functions

1. Given $f(x) = 3x$ and $g(x) = 4x - 1$

Work out the following.

- a) $ff(3)$
- b) $fg(4)$
- c) $gf(4)$
- d) $gg(-3)$
- e) $fg(2.5)$

2. Given $f(x) = 5x - 3$ and $g(x) = x^2 + 2$

Work out the following.

- a) $fg(3)$
- b) $gf(7)$
- c) $fg(x)$
- d) $gf(x)$
- e) $gg(x)$



Composite Functions

3. Given $f(x) = 3x^2$ and $g(x) = x^2 - 7$

Work out the following.

a) $ff(x)$

b) $fg(x)$

c) $gf(x)$

d) $gg(x)$

4. Given $f(x) = \frac{8}{x}$, $g(x) = 2x^2 + 4$ and

$$h(x) = x^2$$

Work out the following.

a) $fg(x) + gf(x)$

b) $fgh(x)$

5. Given that $f(x) = x^2 + 4$ and $g(x) = 2x - 3$,
solve the equation

$$fg(x) = gf(x)$$



Answers



Composite Functions

1. Given $f(x) = 3x$ and $g(x) = 4x - 1$

Work out the following.

a) $ff(3) = 27$

b) $fg(4) = 45$

c) $gf(4) = 47$

d) $gg(-3) = -53$

e) $fg(2.5) = 27$

2. Given $f(x) = 5x - 3$ and $g(x) = x^2 + 2$

Work out the following.

a) $fg(3) = 52$

b) $gf(7) = 1026$

c) $fg(x) = 5x^2 + 7$

d) $gf(x) = 25x^2 - 30x + 11$

e) $gg(x) = x^4 + 4x^2 + 6$



Composite Functions

3. Given $f(x) = 3x^2$ and $g(x) = x^2 - 7$

Work out the following.

a) $ff(x) = 27x^4$

b) $fg(x) = 3x^4 - 42x^2 + 147$

c) $gf(x) = 9x^4 - 7$

d) $gg(x) = x^4 - 14x^2 + 42$

4. Given $f(x) = \frac{8}{x}$, $g(x) = 2x^2 + 4$ and

$$h(x) = x^2$$

Work out the following.

a) $fh(x) + hf(x) = \frac{72}{x^2}$

b) $fgh(x) = \frac{4}{x^4 + 2}$

5. Given that $f(x) = x^2 + 4$ and $g(x) = x - 3$,
solve the equation

$$fg(x) = gf(x)$$

$$x = 2$$

