



SCAN ME

Composite Functions



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REVISE THIS TOPIC

CHECK YOUR ANSWERS

1 $f(x) = 3x + 4$ $g(x) = x + 10$ $h(x) = x^2$



(a) Work out $fg(x)$
Give your answer in the form $ax + b$ where a and b are integers

$fg(x) = \dots\dots\dots$
(2)

(b) Work out $gf(x)$
Give your answer in the form $ax + b$ where a and b are integers

$gf(x) = \dots\dots\dots$
(2)

(a) Work out $gh(x)$

$gh(x) = \dots\dots\dots$
(1)

(Total for Question 1 is 5 marks)





2 $f(x) = x - 3$

$g(x) = x^2 + 1$

$h(x) = 10x$

- (a) Work out $fg(x)$
Fully simplify your answer.

$fg(x) = \dots\dots\dots$
(2)

- (b) Work out $hg(x)$
Fully simplify your answer.

$hg(x) = \dots\dots\dots$
(2)

- (c) Work out $gh(x)$
Fully simplify your answer.

$gh(x) = \dots\dots\dots$
(2)

(Total for Question 2 is 6 marks)



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

$g(x) = 4x - 8$

$h(x) = \sqrt{x}$



- (a) Work out $fg(x)$
Fully simplify your answer.

$fg(x) = \dots\dots\dots$
(2)

- (b) Work out $gf(x)$
Fully simplify your answer.

$gf(x) = \dots\dots\dots$
(2)

- (c) Work out $hf(x)$
Fully simplify your answer.

$hf(x) = \dots\dots\dots$
(2)

(Total for Question 3 is 6 marks)





4 $f(x) = x - 5$ $g(x) = x^2 + 30$

- (a) Work out $fg(x)$
Fully simplify your answer.

$fg(x) = \dots\dots\dots$
(2)

- (b) Work out $fg(3)$

$\dots\dots\dots$
(2)

- (c) Work out $gf(x)$
Give your answer in the form $ax^2 + bx + c$ where a, b and c are integers.

$gf(x) = \dots\dots\dots$
(3)

(Total for Question 4 is 7 marks)



5 $f(x) = 2x + 1$

$g(x) = \sqrt{x + 3}$



(a) Work out $g(13)$

.....
(1)

(b) Work out $fg(13)$

.....
(1)

(c) Work out $gf(16)$

.....
(2)

(Total for Question 5 is 4 marks)



6 $f(x) = x + 2$

$g(x) = x^3$

$h(x) = \sqrt{x}$



(a) Work out $gf(3)$

.....
(2)

(b) Work out $gh(x)$

Give your answer in the form x^k where k is a fraction.

$gh(x) =$
(2)

(c) Work out $gf(x)$

Give your answer in the form $ax^3 + bx^2 + cx + d$ where a, b, c and d are integers.

$gf(x) =$
(3)

(Total for Question 6 is 7 marks)



7 $f(x) = 2^x$

$g(x) = 1 - x$

$h(x) = 2 + x$



(a) Work out $gf(-3)$

.....
(2)

$hg(x) - gh(x) = k$ where k is an integer.

(b) Find the value of k .

$k =$
(4)

(c) Show that $\frac{fh(x)}{fg(x)} = 2^{ax+b}$ where a and b are integers.

(3)
(Total for Question 7 is 9 marks)

