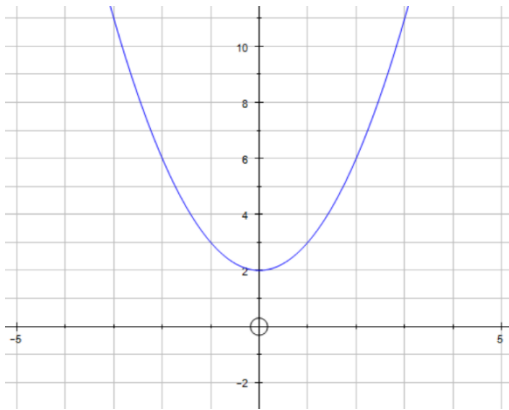# Functions as graphs

name _____

Examples

This is the graph of y = f(x)

Find f(2) _____

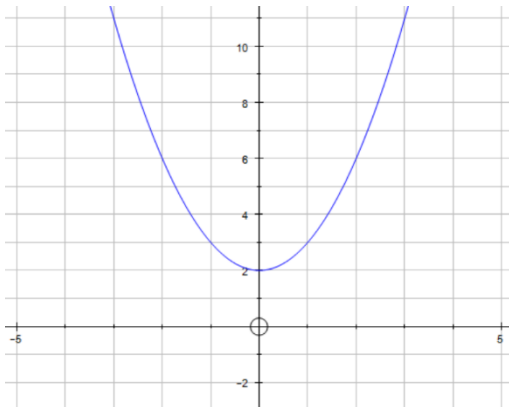Find f(0) _____

Find f(-1) _____

Find f(x) = 3 _____

Find f(x) = 11 _____

Find f(x) = 2 _____
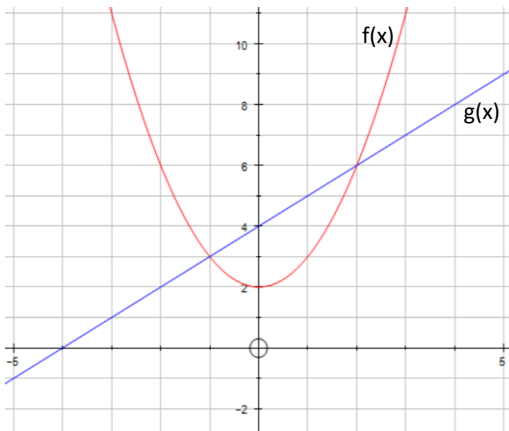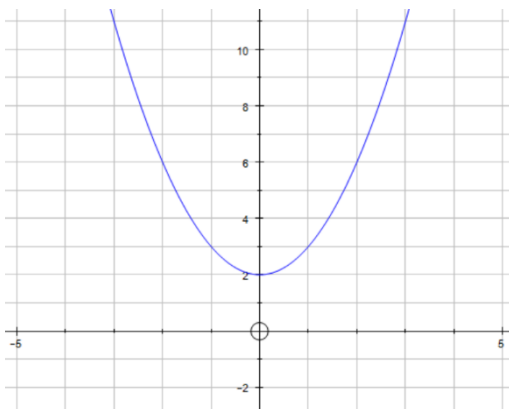
State the range of f(x) _____

f(x)

g(x)

Solve f(x) = h(x)

_____

f(x) = h(x) has two solutions at x = -3 and x = 2

h(x) can be written in the form h(x) = m x + c

Find the values of m and c

Functions as graphs

1

The diagram shows part of the graph of $y = f(x)$.
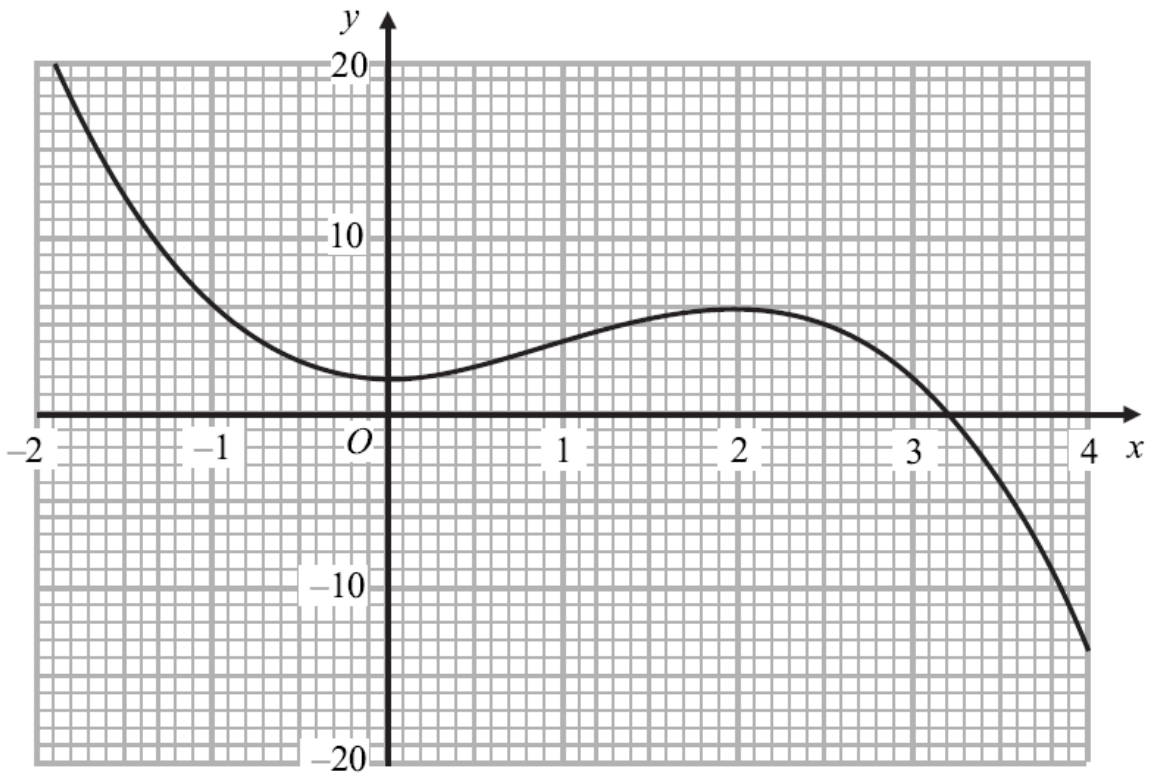
a) Find f(-1)

_____

b) Find f(1)

_____

c) Find f(2)

_____

d) Find f(3)

_____

e) Find ff(0)

_____

f) Solve f(x) = 0

_____

g) Solve f(x) = 10

_____

h) The equation f(x) = a has exactly 2 solutions
   Find the possible values for a

_____

i) The equation f(x) = b has 3 solutions
   Find the range of values for b

_____

Functions as graphs

2 The diagram shows part of y = f(x)

a) Find f(1)

_____

b) Find f(0)

_____

c) Find ff(2)

_____

d) Solve f(x) = 0

_____

e) Solve f(x) = 2 - x

_____

f) State the range of f(x)

_____

g) The equation f(x) = b has exactly 1 solution
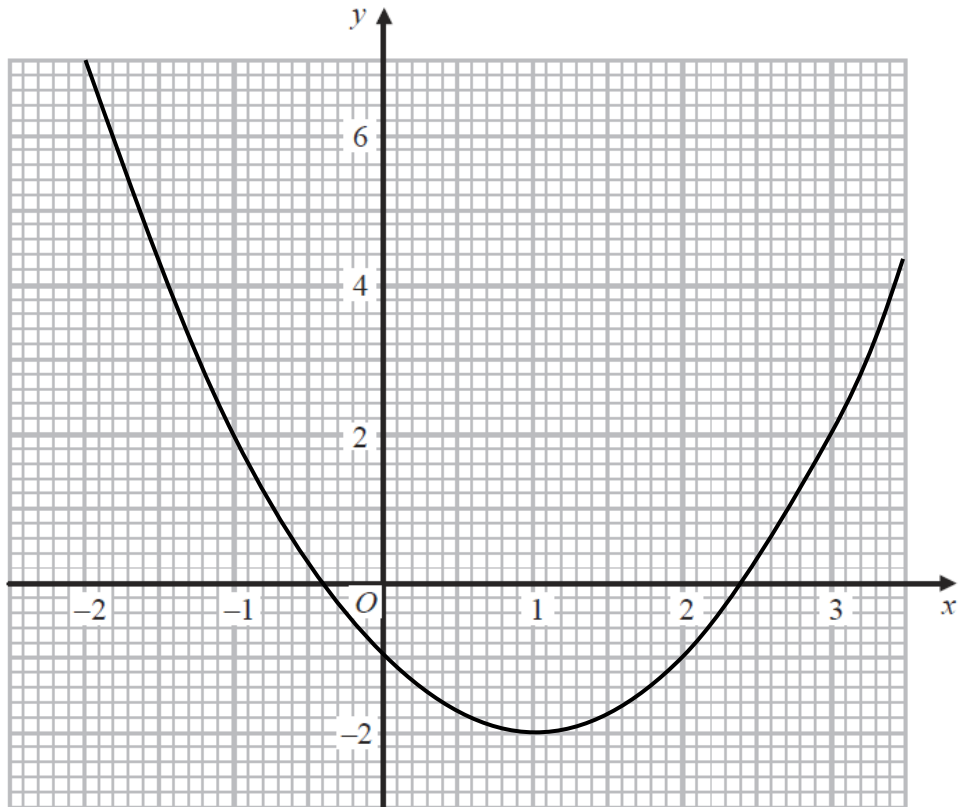Find the value of b

_____

Functions as graphs

name _____

3

The diagram shows part of the graph of $y = f(x)$ and part of the graph of $y = g(x)$.
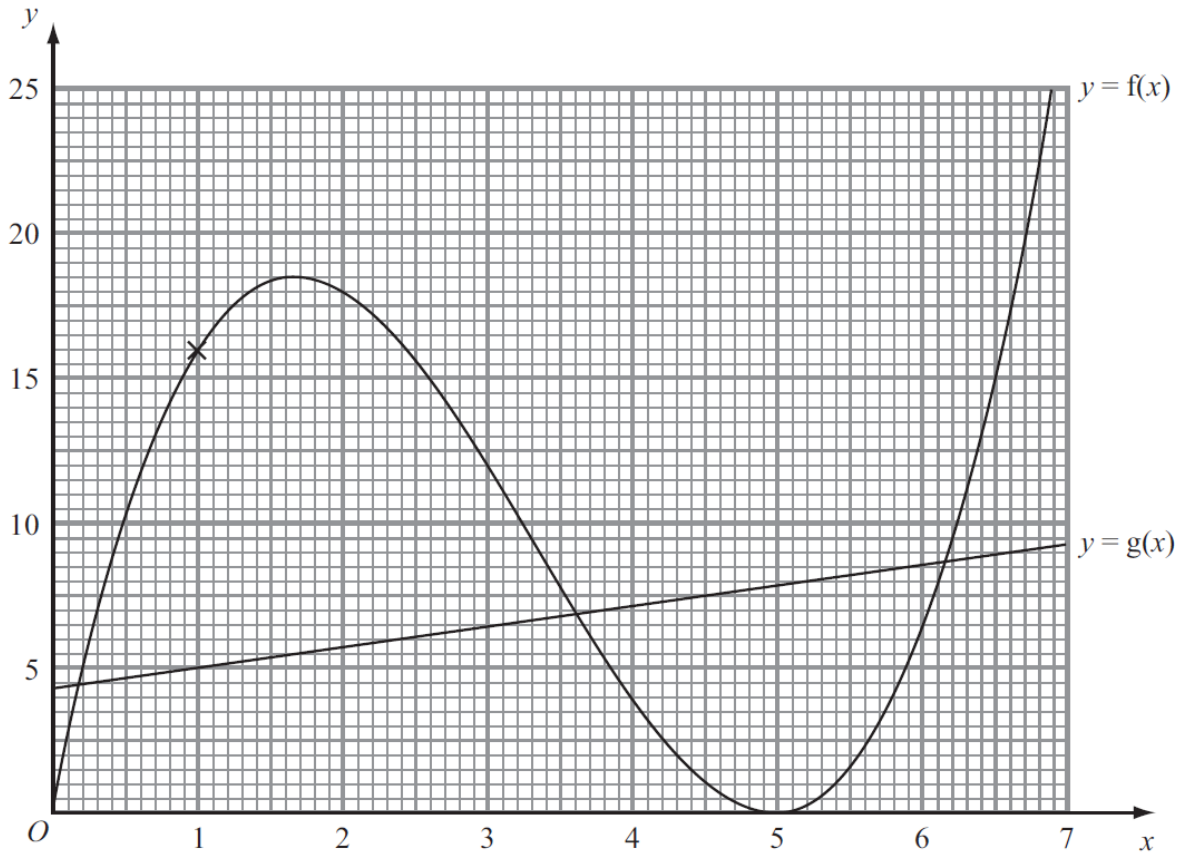
(a) Find f(3).

....
(1)

(b) Solve $f(x) = g(x)$.
Give your answers correct to 1 decimal place.

....
(2)

(c) Find fg(1).

....
(2)

(d) Find an estimate for the gradient of the graph of $y = f(x)$ at the point (1, 16).

....
(3)

(Total 8 marks)

4

The diagram shows part of the graph of $y = f(x)$.

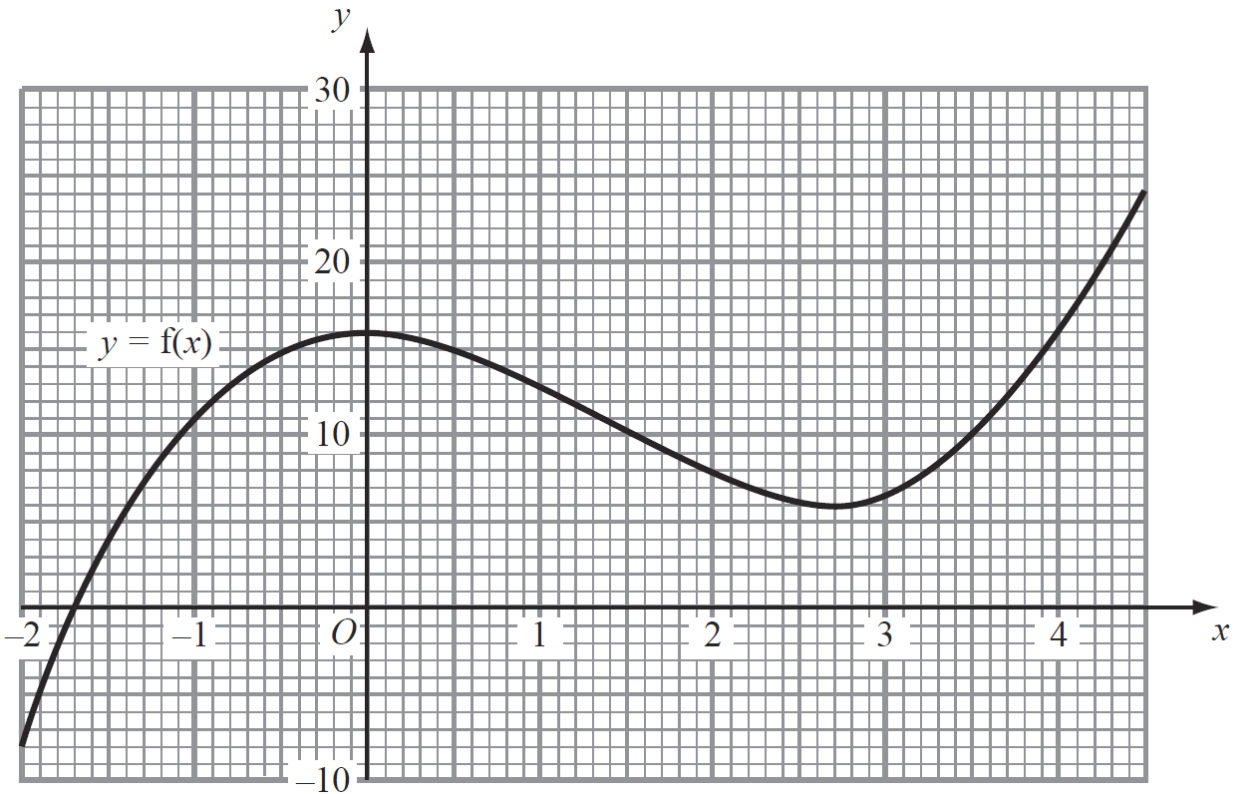(a) Calculate an estimate for the gradient of the curve at the point where $x = 3$

....
(3)

(b) Find an estimate for the solution of the equation $f(x) = 0$

$x =$ ....
(1)

The equation $f(x) = mx + c$ where m and c are numbers, has three solutions.
Two of the solutions are $x = -1$ and $x = 1$

(c) (i) Find the value of c.

$c =$ ....

(ii) Find the third solution of the equation $f(x) = mx + c$.

$x =$ ....
(4)

(Total 8 marks)

5

$$f(x) = \sqrt{x-6}$$

(a) Find f(10)

....
(1)

(b) State which values of x must be excluded from a domain of f

....
(2)

The diagram shows part of the graph of $y = g(x)$
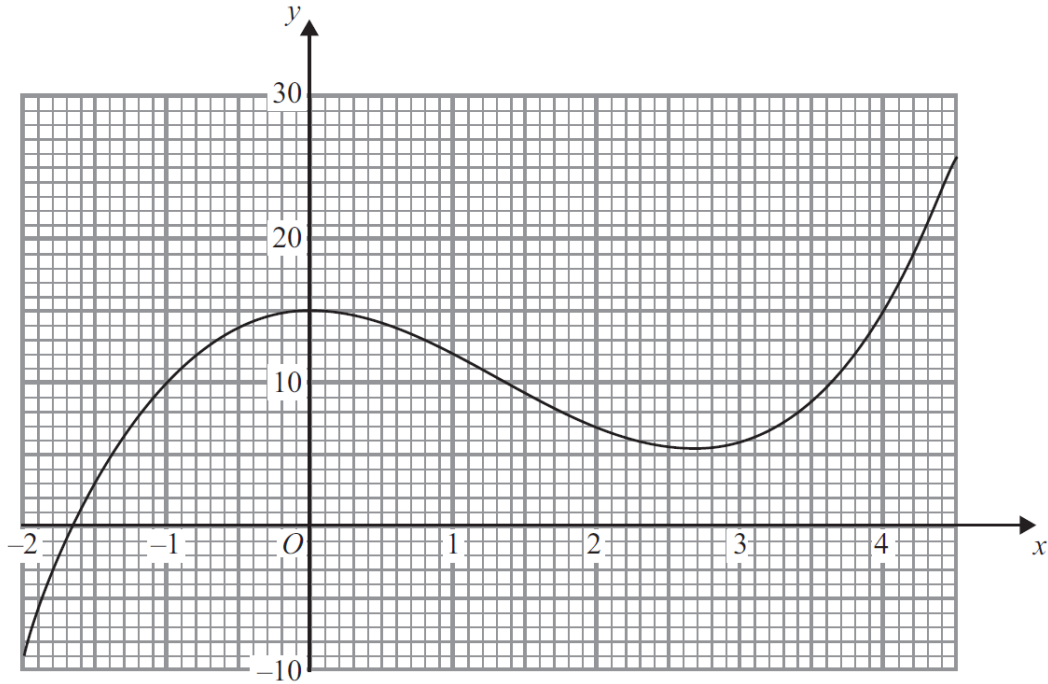
(c) Find g(2)

....
(1)

(d) Find fg(0)

....
(2)

(e) One of the solutions of $g(x) = k$, where k is a number, is $x = 1$

Find the other solutions.
Give your answers correct to 1 decimal place.

....
(3)

(f) Find an estimate for the gradient of the curve at the point where $x = 3.5$
Show your working clearly.

....
(3)
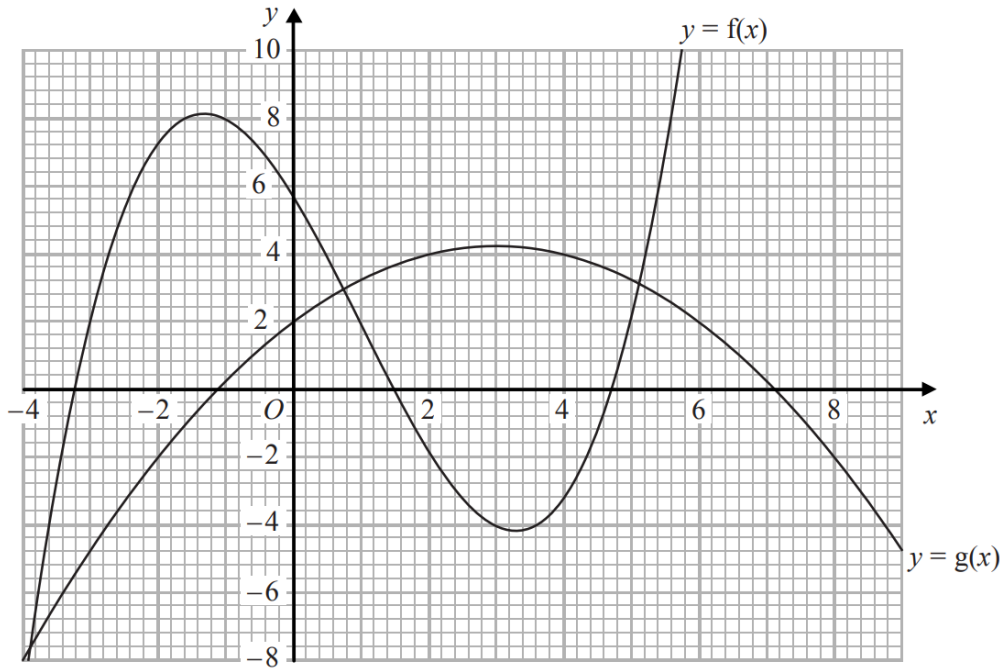
(Total for Question 17 is 12 marks)

Functions as graphs   name _____

6

The diagram shows parts of the graphs of $y = f(x)$ and $y = g(x)$.

(a) Find g(0)

....
(1)

(b) Find gf(−1)

....
(2)

(c) Calculate an estimate for the gradient of the curve $y = f(x)$ at the point on the curve where $x = 3$

....
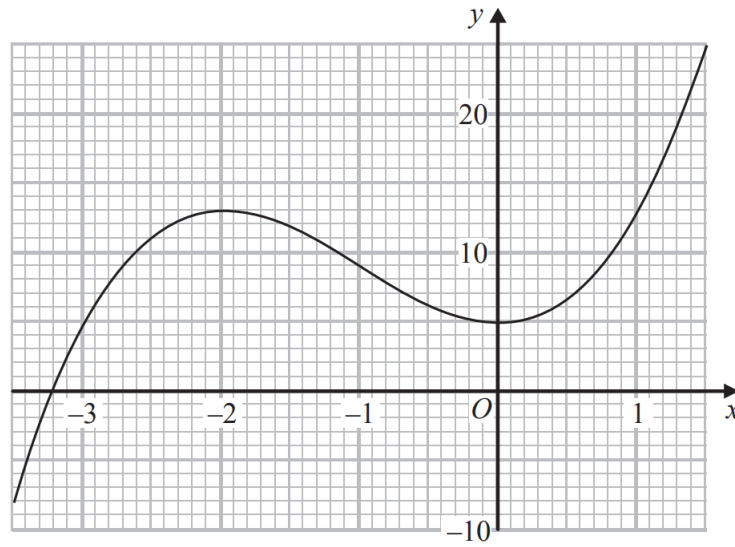(3)

(Total for Question 20 is 6 marks)

7

The diagram shows the graph of $y = f(x)$ for $-3.5 \leqslant x \leqslant 1.5$

(a) Find f(0)

....

(1)

(b) For which values of k does the equation $f(x) = k$ have only one solution?

....

(2)

(c) Find an estimate for the gradient of the curve at the point where $x = -2.5$

....

(3)

$g(x) = \dfrac{1}{2 + x}$

(d) State which value of x must be excluded from any domain of g

....

(1)

(e) Find fg(−3)

....

(2)

(Total for Question 15 is 9 marks)