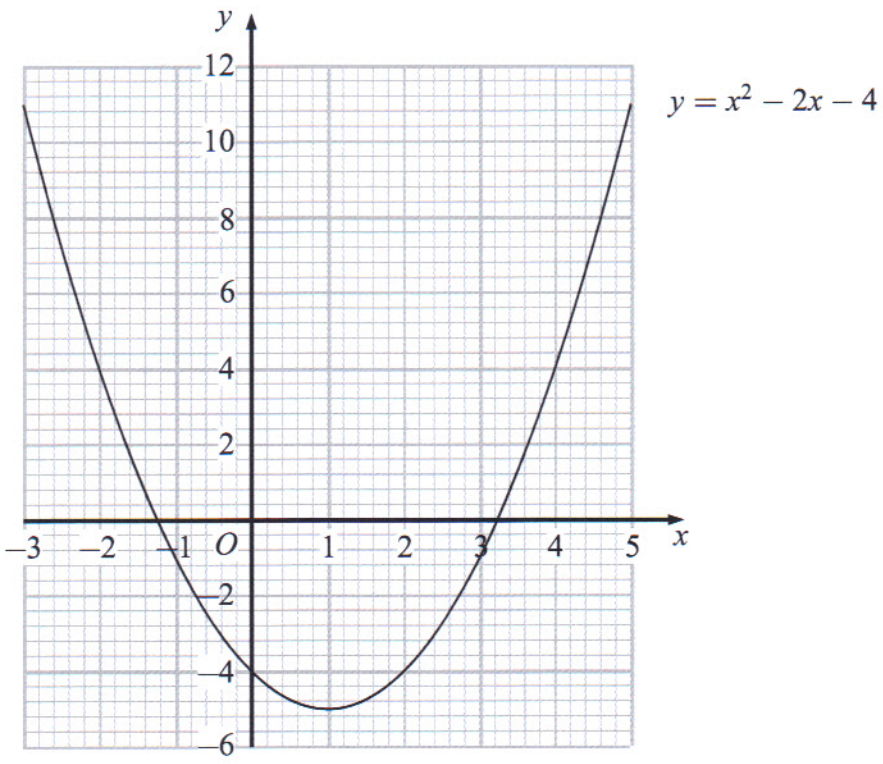
May 063H

**16.** Part of the graph of $y = x^2 - 2x - 4$ is shown on the grid.



May 06 3H Q16 cont.

(a) Write down the coordinates of the minimum point of the curve.

( ..... , ..... )

**(1)**

(b) Use the graph to find estimates of the solutions to the equation $x^2 - 2x - 4 = 0$
Give your answers correct to 1 decimal place.

.....

**(2)**

(c) Draw a suitable straight line on the grid to find estimates of the solutions of the equation $x^2 - 3x - 6 = 0$

.....

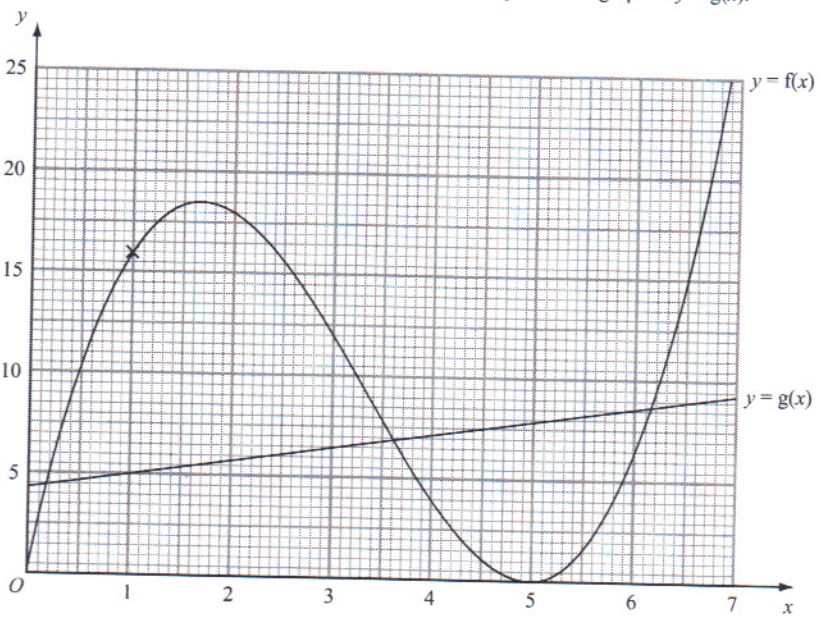
**(3)**

Leave blank

May 09 3H

Leave blank

**15.** 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)**

May 09 3H Q15 cont.

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

Leave blank

.....

**(3)**

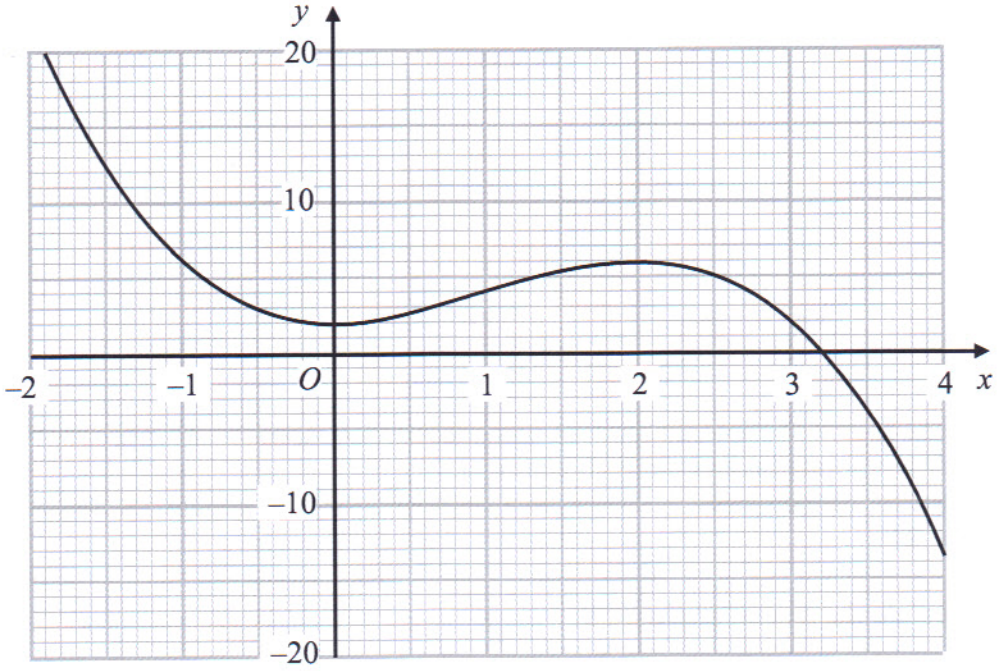
**Q15**

**(Total 8 marks)**

Leave blank

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

Nov 05 3H




(a) Find f(3).

.....

**(1)**

(b) Solve $f(x) = 6$

.....

**(2)**

(c) Find ff(1).

.....

**(2)**

Leave blank

(d) Find an estimate for the gradient of the curve at the point where $x = -1$

Nov 05 3H Q17 cont.

.....

**(3)**

The equation $f(x) = k$, where $k$ is a number, has 3 solutions between $x = -2$ and $x = 4$

(e) Complete the inequalities which $k$ must satisfy.

..... $< k <$ .....

**(2)**

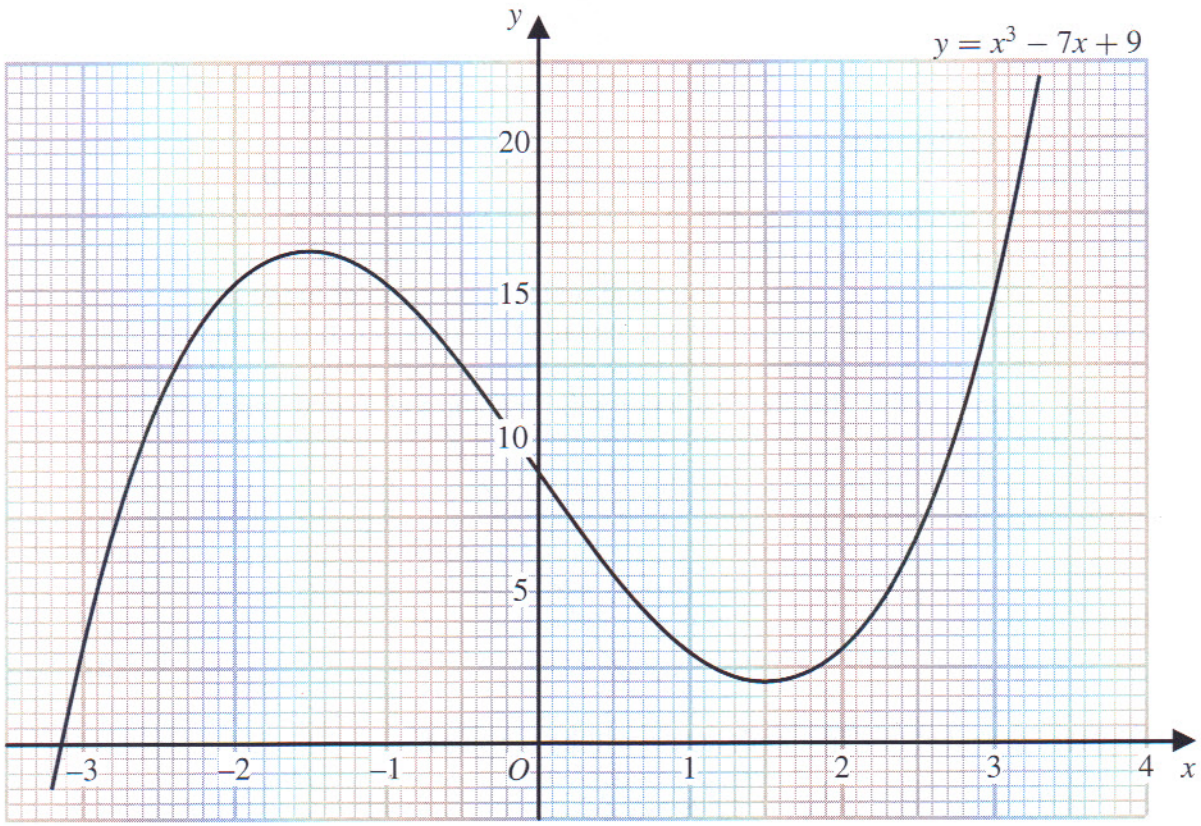
**Q17**

**(Total 10 marks)**

Leave blank

**20.** Part of the graph of $y = x^3 - 7x + 9$ is shown on the grid.

May 05 3H




The graph of $y = x^3 - 7x + 9$ and the line with equation $y = k$, where $k$ is an integer, have 3 points of intersection.

(a) Find the greatest possible value of the integer $k$.

$k =$ .....

**(1)**

May 05 3H Q20 cont.

Leave blank

(b) By drawing a suitable straight line on the grid, find estimates of the solutions of the equation $x^3 - 6x - 2 = 0$.
Give your answers correct to 1 decimal place.

.....

**(3)**

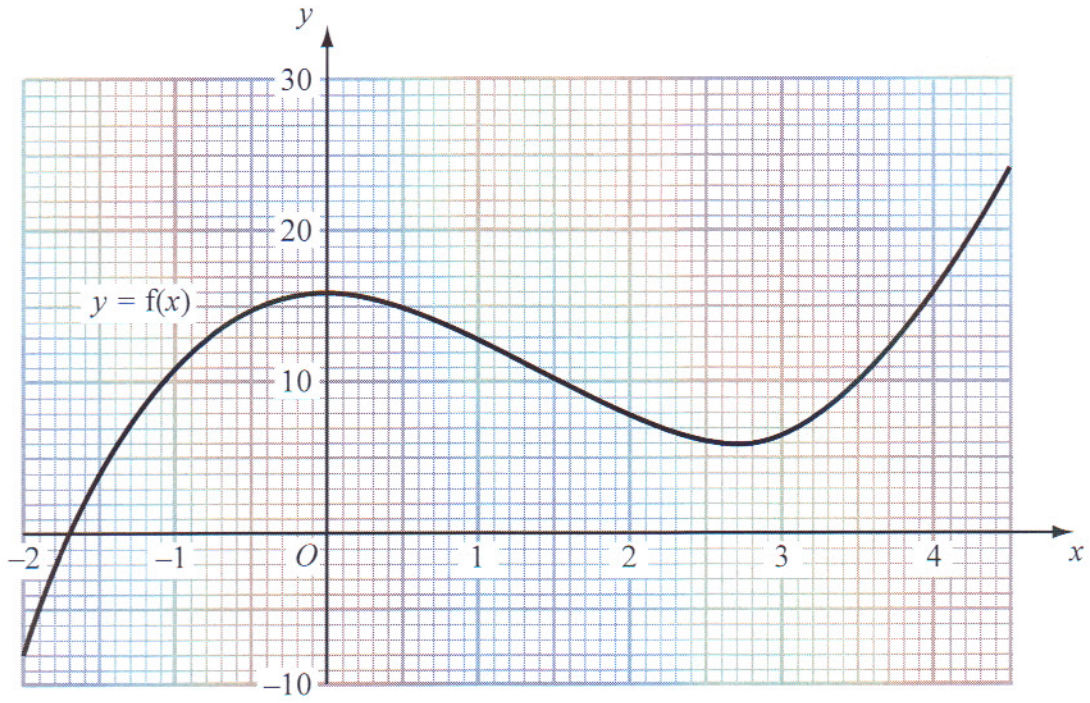
Q20

**(Total 4 marks)**

Leave blank

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

May 08 3H




(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 $f(x) = 0$

May 08 3H Q21 cont

$x =$ .....

**(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)**

**Q21**