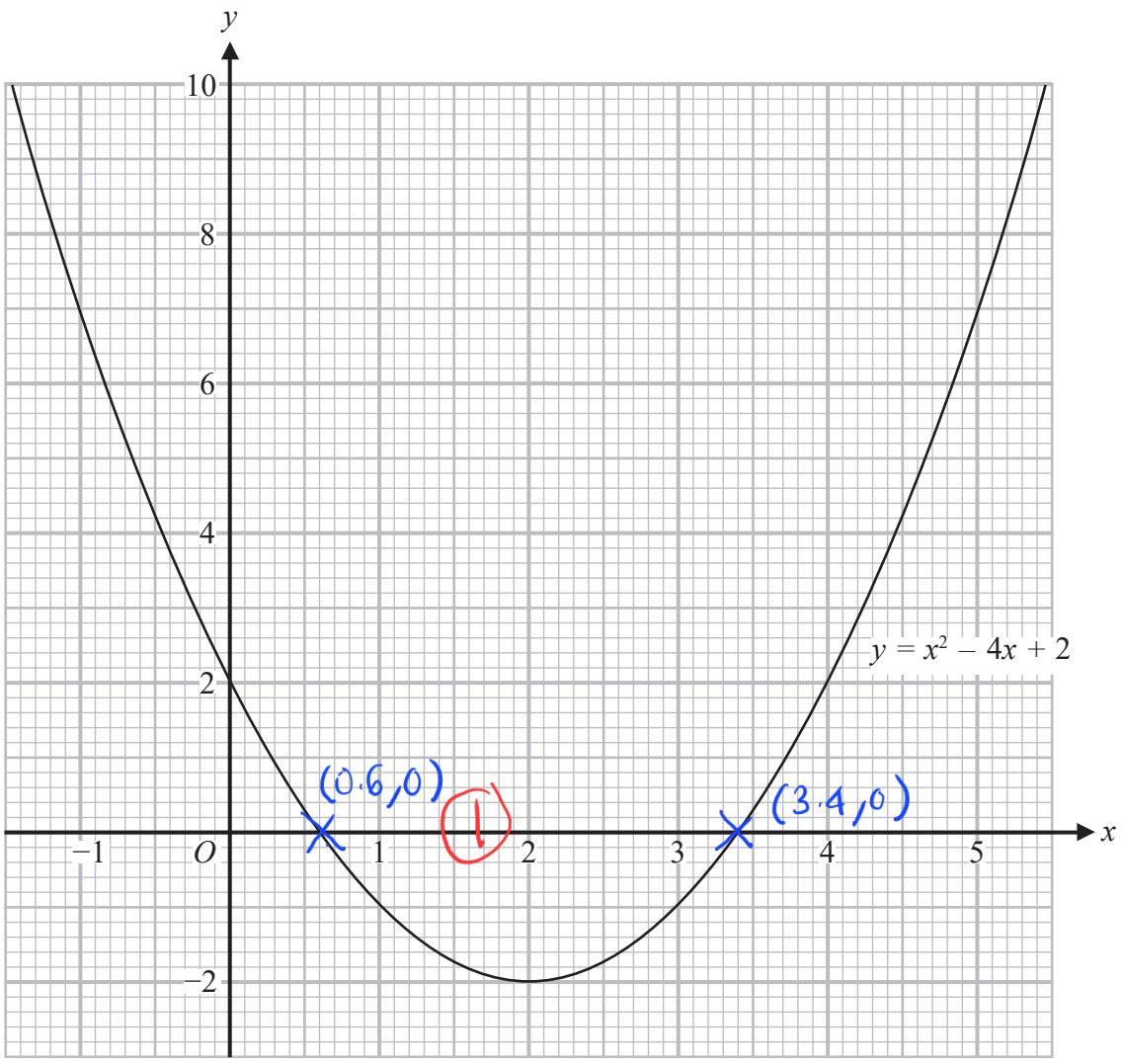
1



(b) Use this graph to find estimates for the solutions of the quadratic equation $x^2 - 4x + 2 = 0$

1 small box = 0.1

$x = 0.6$, $x = 3.4$

(2)

(Total for Question 1 is 2 marks)

2 (a) Complete the table of values for $y = x^2 - 3x + 1$

x	−1	0	1	2	3	4
y	5	1	−1	−1	1	5

$y = (-1)^2 - (3 \times -1) + 1$
$= 1 + 3 + 1$
$= 5$

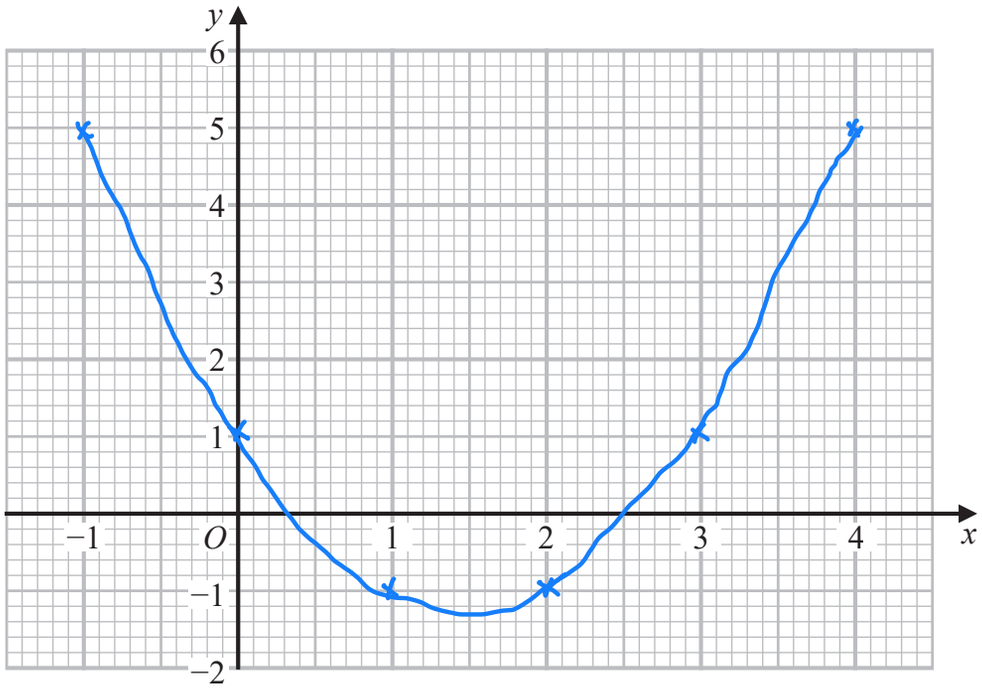
$2^2 - 6 + 1$
$= -1$ ✓①

$3^2 - 9 + 1$
$= 1$

✓① $16 - 12 + 1 = 5$

(2)

(b) On the grid, draw the graph of $y = x^2 - 3x + 1$ for values of x from −1 to 4



(2)

(c) Using your graph, find estimates for the solutions of the equation $x^2 - 3x + 1 = 0$

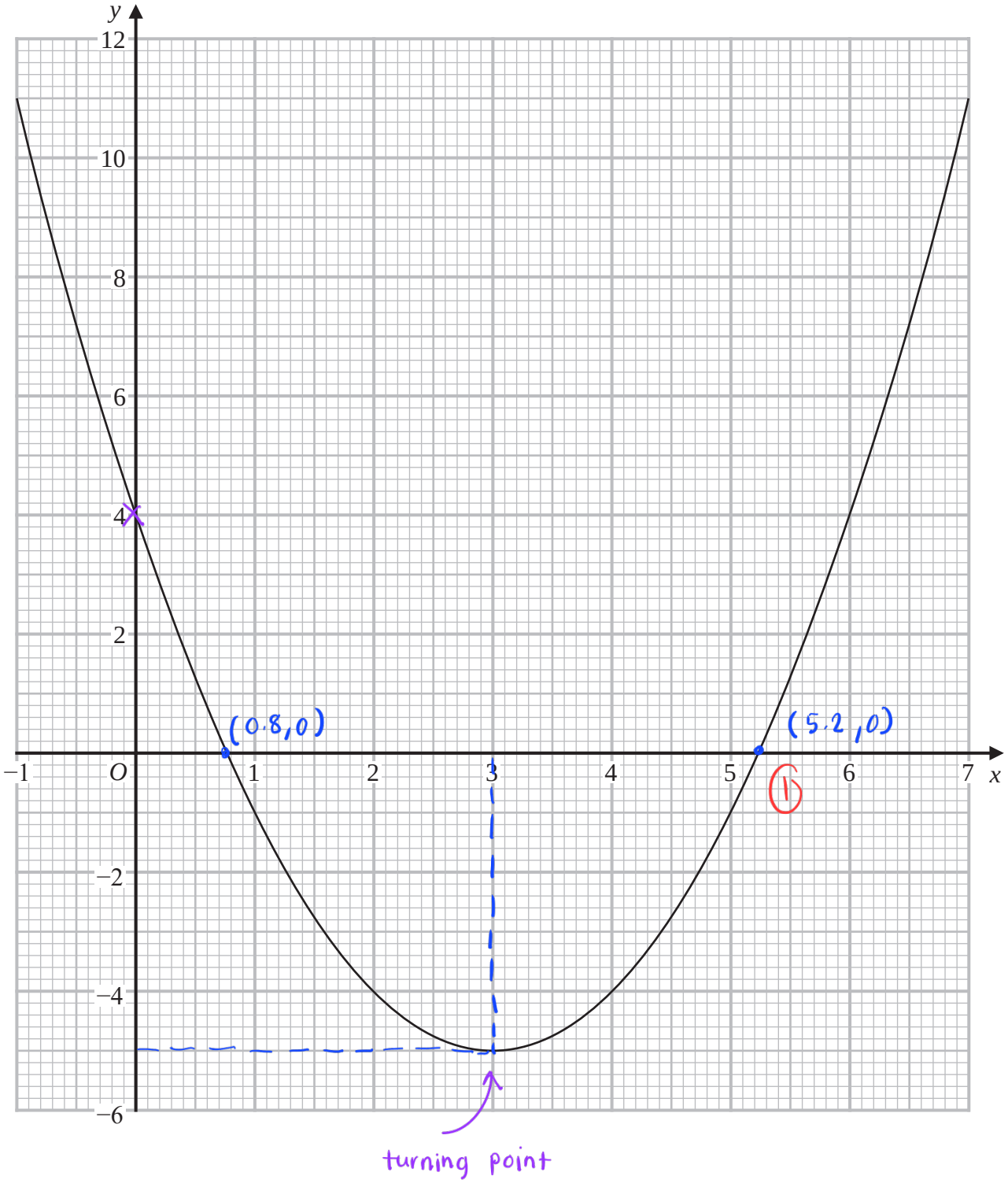
Solutions when $y = 0$
$x = 2.5$ ✓① or $x = 0.35$ ✓①

2.5 , 0.35

(2)

(Total for Question 2 is 6 marks)

3 Here is the graph of $y = x^2 - 6x + 4$



(a) Write down the y intercept of the graph of $y = x^2 - 6x + 4$

Substitute $x = 0$ into the equation to get $c = 4$

4 (1)

.....

(1)

(b) Write down the coordinates of the turning point of the graph of $y = x^2 - 6x + 4$

(3 , −5) (1)

(1)

(c) Use the graph to find estimates for the roots of $x^2 - 6x + 4 = 0$

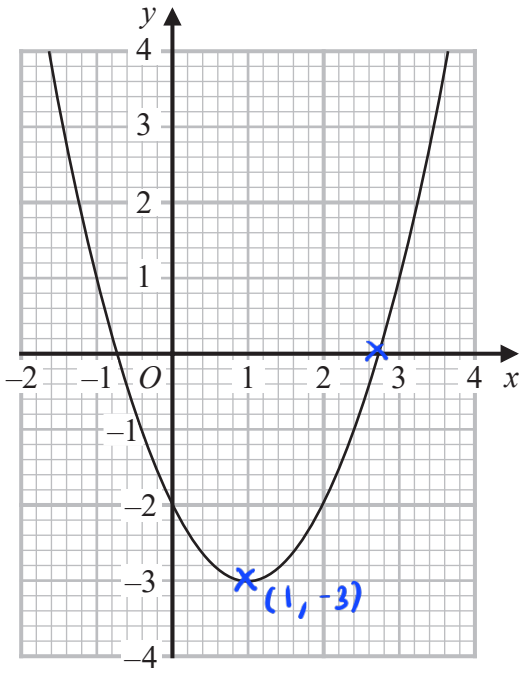
0·8 and 5.2 (1)

.....

(2)

(Total for Question 3 is 4 marks)

4 Here is the graph of $y = x^2 - 2x - 2$



(a) Write down the coordinates of the turning point on the graph of $y = x^2 - 2x - 2$

(1 (1) , -3)

(1)

(b) Write down an estimate for one of the roots of $x^2 - 2x - 2 = 0$

x-intercepts (found on graph)

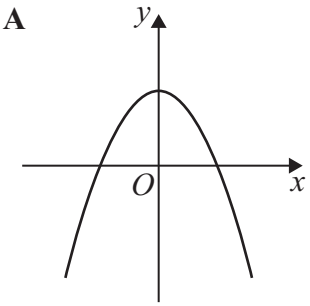
2.7 (1)

(1)

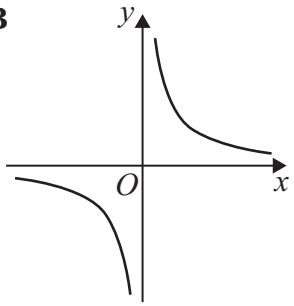
(Total for Question 4 is 2 marks)

5 Here are some graphs.

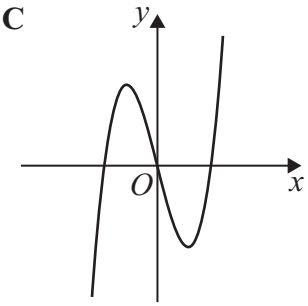
A



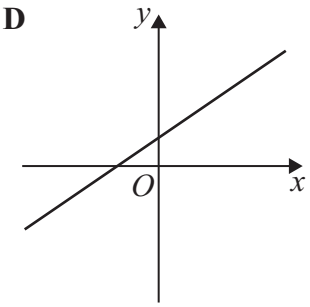
B



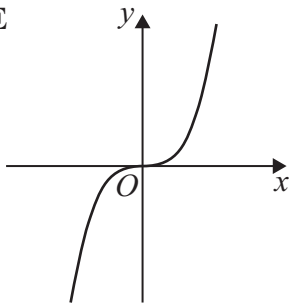
C



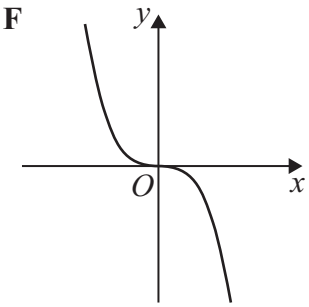
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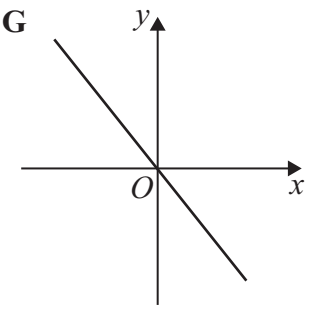
E



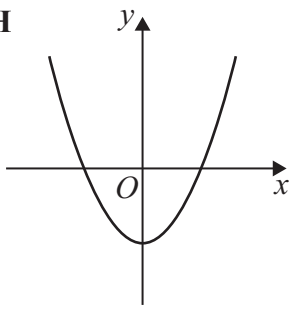
F



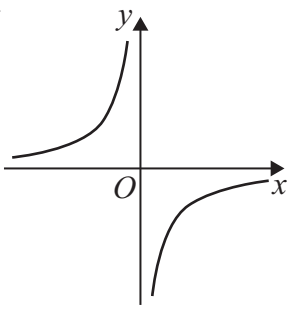
G



H



J



Write down the letter of the graph that could have the equation

(i) $y = x^2 - 4$

Graph of quadratic with y-intercept at -4

H (1)

(1)

(ii) $y = x^3$

Graph of cubic. when x(+), y(-)
when y(+), x(-)

F (1)

(1)

(iii) $y = \frac{5}{x}$

Graph of reciprocal. when x(+), y(-)
when y(+), x(-)

J (1)

(1)

(Total for Question 5 is 3 marks)

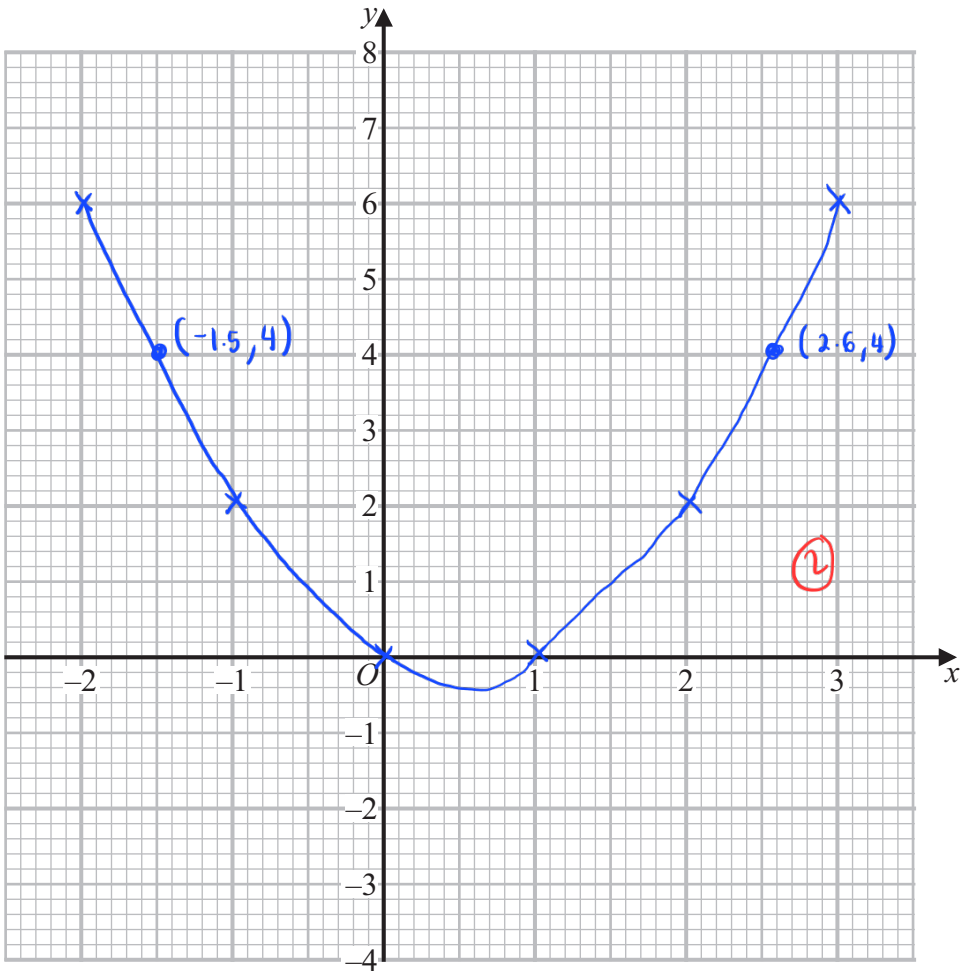
6 (a) Complete the table of values for $y = x^2 - x$

When $x = -1$: $y = (-1)^2 - (-1) = 2$
$x = 1$: $y = (1)^2 - 1 = 0$
$x = 3$: $y = (3)^2 - 3 = 6$

x	–2	–1	0	1	2	3
y	6	2	0	0	2	6

(2)

(b) On the grid, draw the graph of $y = x^2 - x$ for values of x from –2 to 3



(2)

(c) Use your graph to find estimates for the solutions of the equation $x^2 - x = 4$

Find the x-coordinate when $y = 4$

-1.5 , 2.6

(2)

(Total for Question 6 is 6 marks)