

Surname	
Other Names	
Candidate's Signature	

GCSE 9 - 1 Questions

Drawing Quadratic Graphs 1

Calculator Allowed

INSTRUCTIONS TO CANDIDATES

Write your name in the space provided.

Write your answers in the spaces provided in this question paper.

Answer ALL questions.

Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

You should have a ruler, compass and protractor where required.

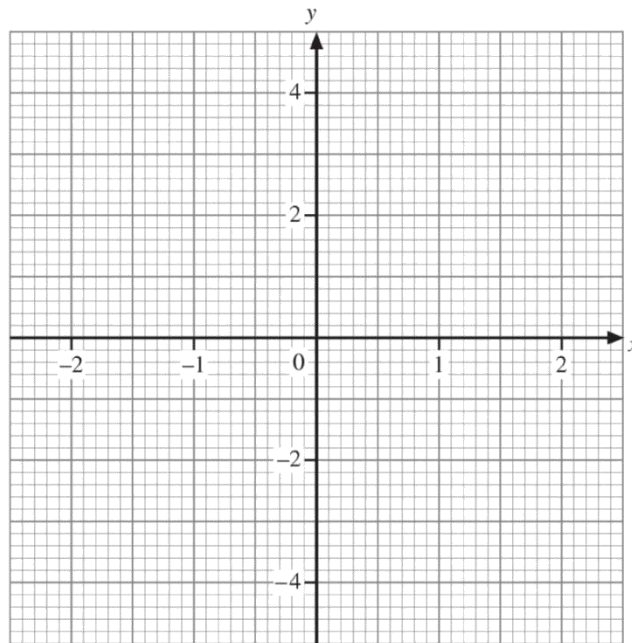
Total Marks :

1)

(a) Complete the table of values for $y = x^2 - 4$

x	-2	-1	0	1	2
y	0		-4	-3	0

[1]

(b) Hence draw the graph of $y = x^2 - 4$ 

[2]

(c) Draw the line $y = -1$ on the graph above and find the x co-ordinates of the points of intersection with the graph of $y = x^2 - 4$ Answer $x =$ _____ [2]

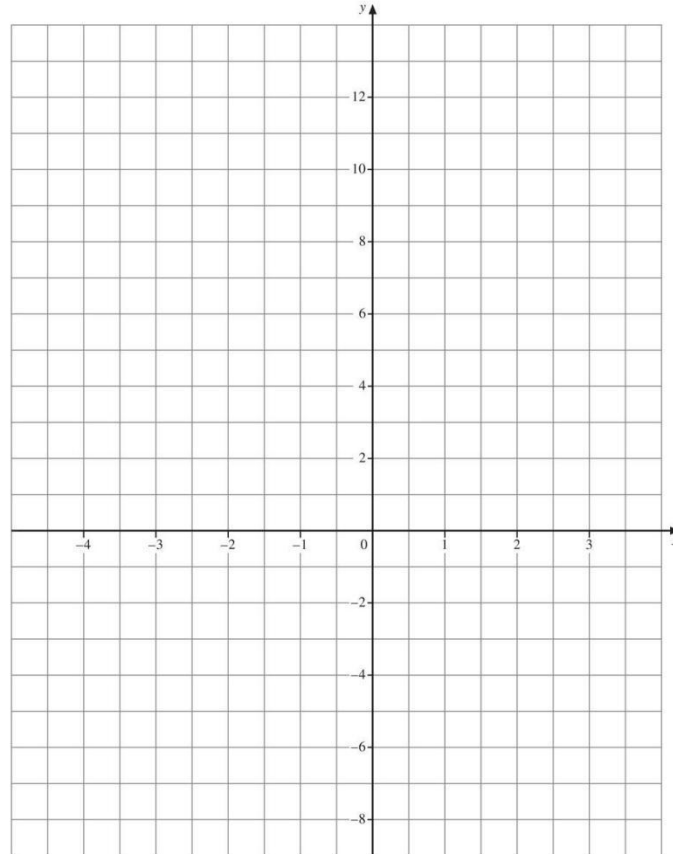
2)
(a) Complete the table for the graph of $y = 2x^2 + 3x - 7$

x	-4	-3	-2	-1	0	1	2
y	13	2	-5		-7	-2	

[2]

(b) Hence draw the graph on the grid opposite.

[2]

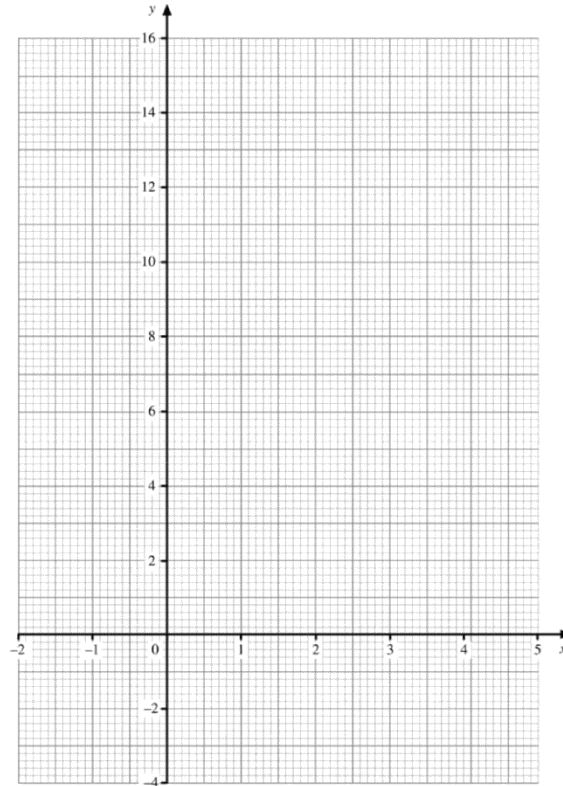


3) (a) Complete the table below for the curve $y = 3x^2 - 9x + 4$

x	-1	0	1	2	3	4
y		4	-2	-2		16

[2]

(b) Hence draw the graph of $y = 3x^2 - 9x + 4$ on the graph paper below. [2]



(c) Use the graph to find

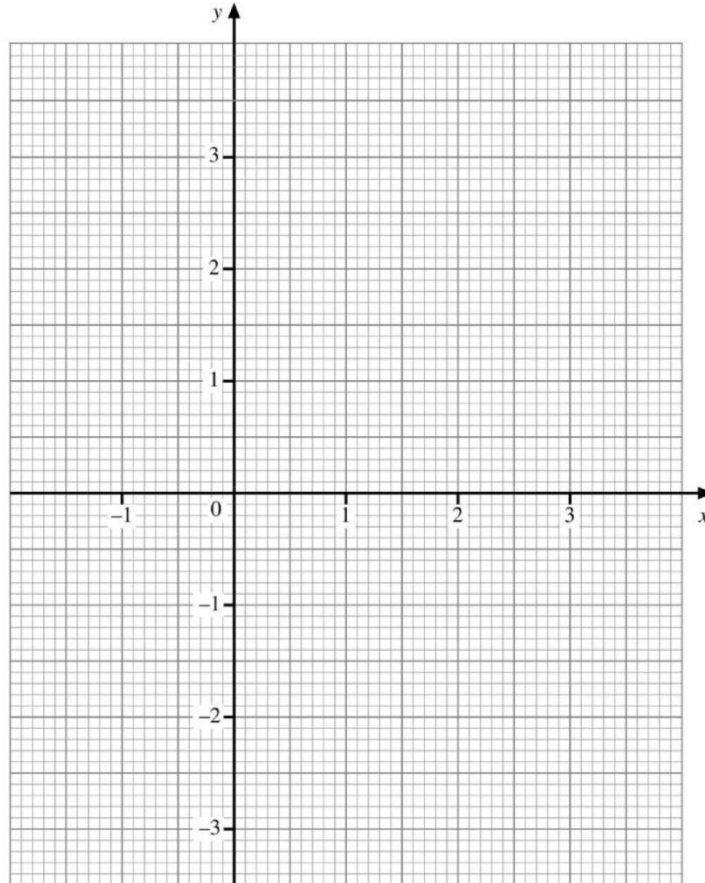
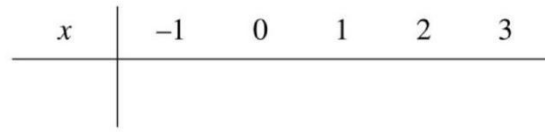
(i) the values of x when $y = 10$

Answer _____ [2]

(ii) the minimum value of y .

Answer _____ [1]

- 4)
(a) On the graph paper below, draw the graph of $y = x^2 - 3x$
 for $-1 \leq x \leq 3$



[2]

- (b)** From your graph, estimate the minimum value of y

Answer $y =$ _____ [1]

- 5)
(i) Complete the table for $y = x^2 - 5$

x	-4	-3	-2	-1	0	1	2	3	4
y		4	-1	-4	-5	-4	-1	4	11

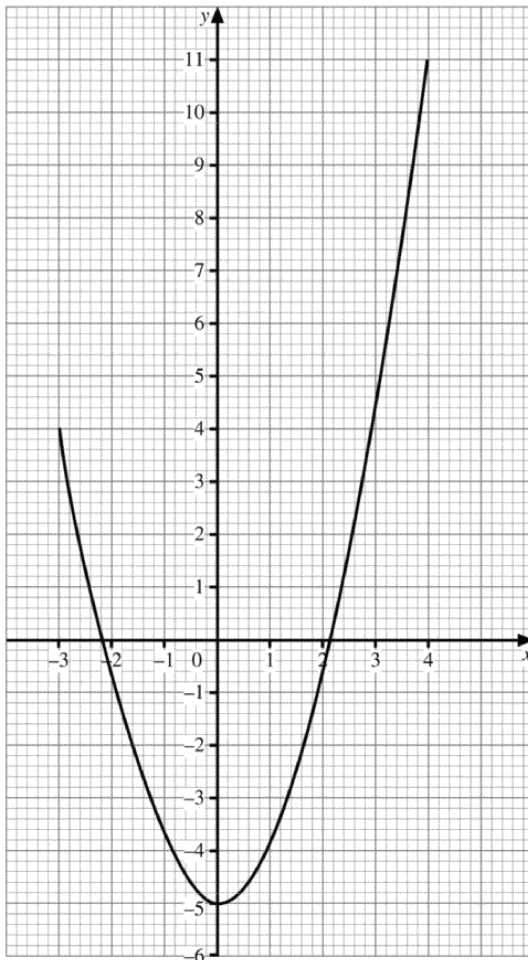
[1]

- (ii)** On the graph paper opposite, the graph of $y = x^2 - 5$ for $-3 \leq x \leq 4$ is drawn.

Use the graph to solve $x^2 - 5 = 0$

Answer _____ [2]

- (iii)** If the line $y = 2$ is drawn, the x values of the points of intersection will be the square roots of which number?



Answer _____ [1]

6)

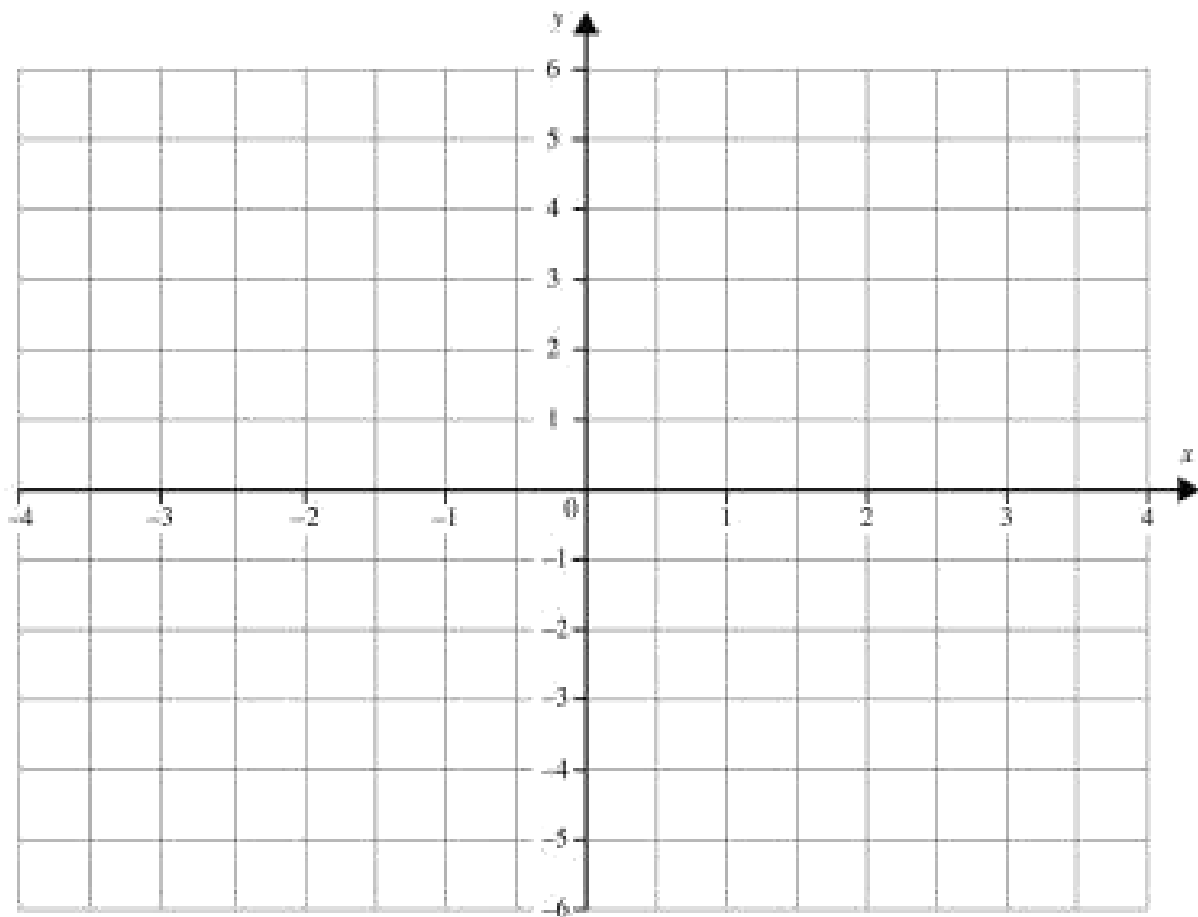
(a) Complete the table for the graph of $y = 5 - x^2$

x	-3	-2	-1	0	1	2
y	-4		-4	5	4	

[2]

(b) Hence draw the graph on the grid below.

[2]



7)

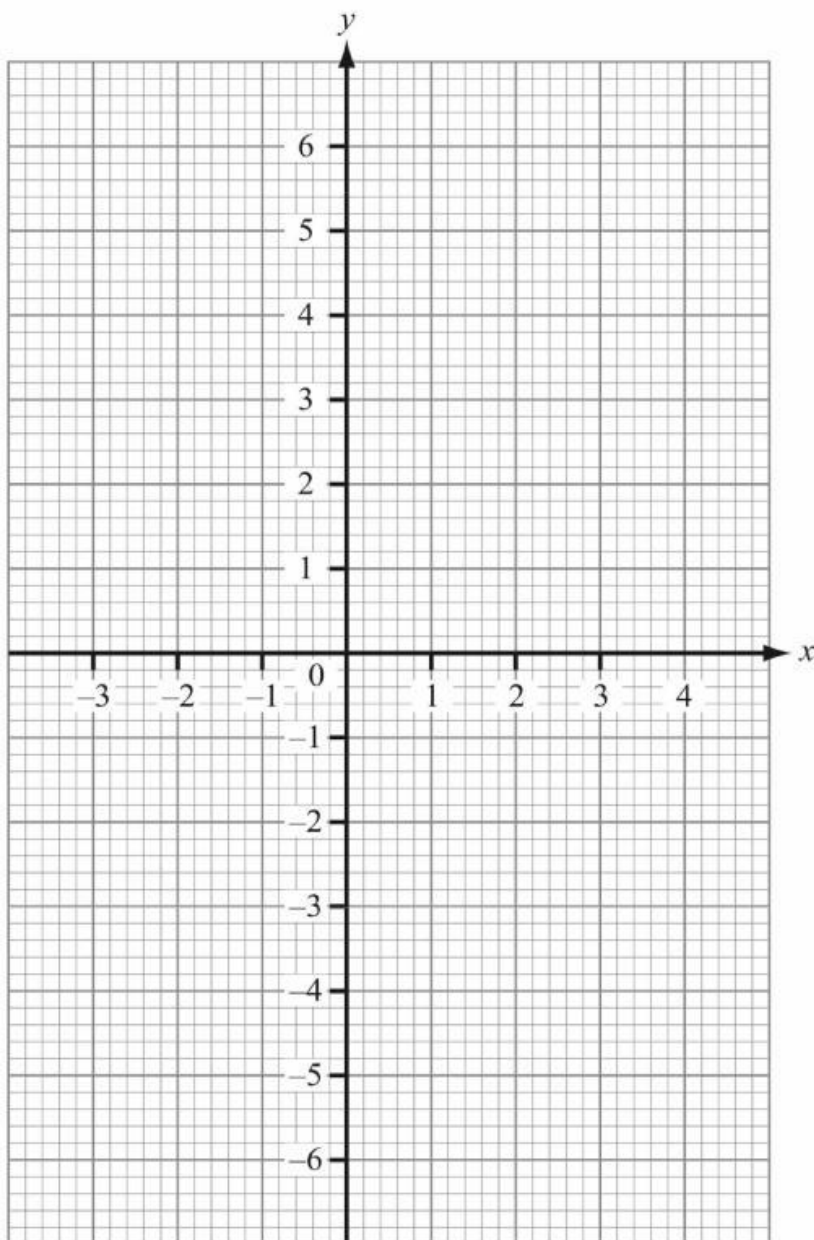
(a) Complete the table below for the curve $y = x^2 + x$

x	-3	-2	-1	0	1	2
y	6		0	0	2	6

[1]

(b) Hence draw the graph of $y = x^2 + x$ on the graph paper.

[2]



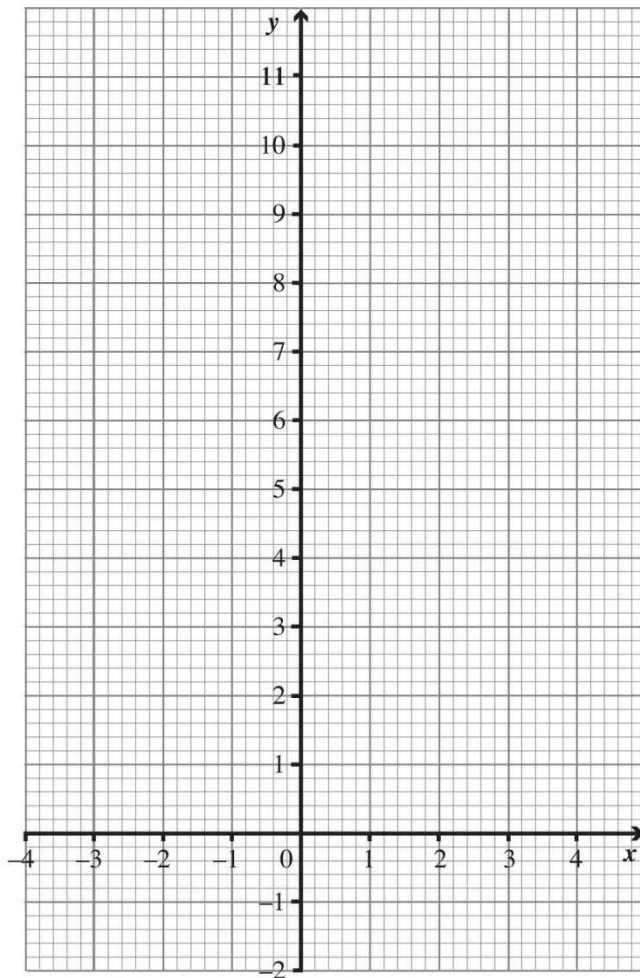
8) (a) Complete the table for

$$y = 8 - 3x - x^2$$

x	-4	-3	-2	-1	0	1	2
y	4	8		10	8		-2

[2]

(b) Draw the graph for $y = 8 - 3x - x^2$



[2]

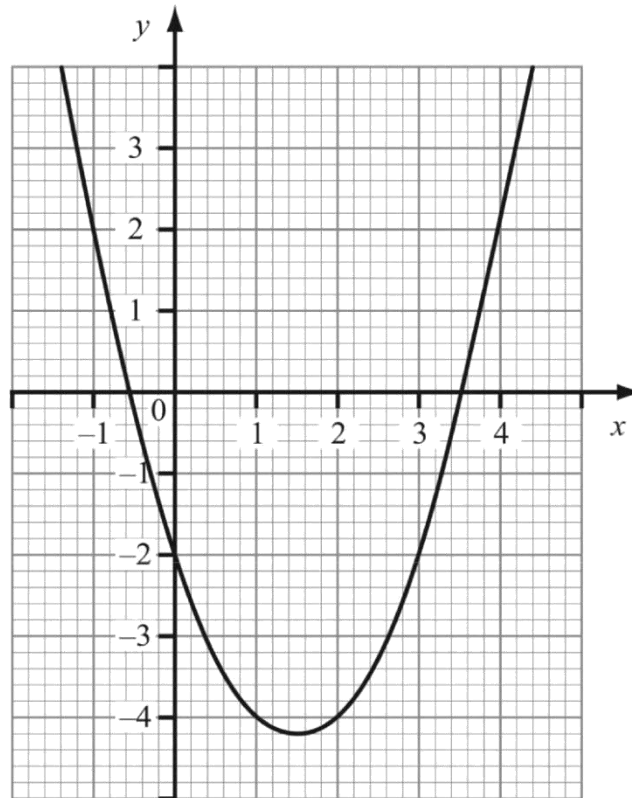
(c) Use your graph to find the solutions to the equation

$$7 = 8 - 3x - x^2$$

Answer $x =$ _____ [2]

Visit www.mathsnote.com for more resources

9) The grid shows the graph of $y = x^2 - 3x - 2$



By drawing an appropriate straight line, solve the equation $x^2 - 4x + 1 = 0$

Answer $x =$ _____ [3]

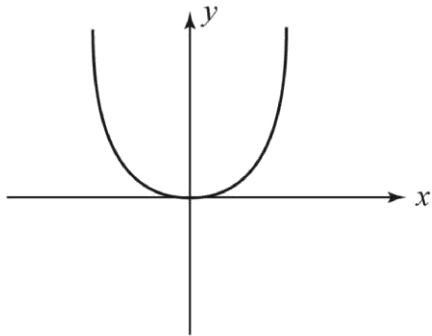
10)

$$y = x^2 + 2$$

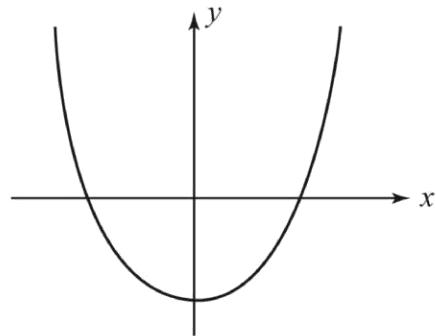
$$y = x^2 - 2$$

$$y = x^2$$

(a) Below are two graphs. Choose the correct equation from the three listed above to match each graph.

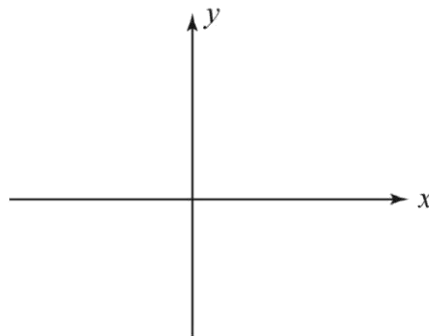


Equation: _____



Equation: _____ [2]

(b) Sketch the graph of the remaining equation.



[1]

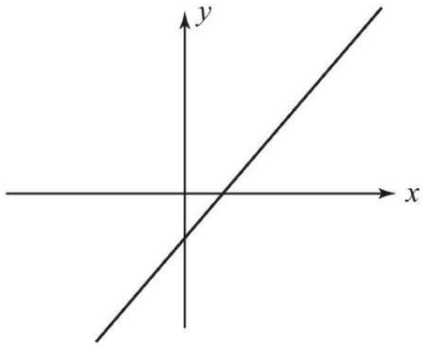
11)

$$y = x^2 + 2$$

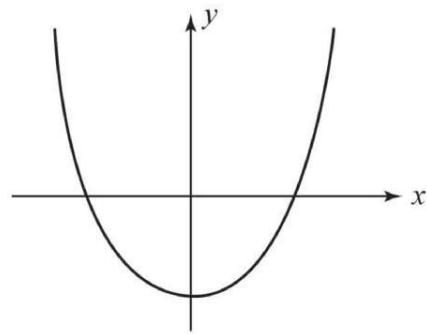
$$y = x^2 - 2$$

$$y = x - 2$$

- (a) Below are two graphs. Choose the correct equation from the three listed above to match each graph.

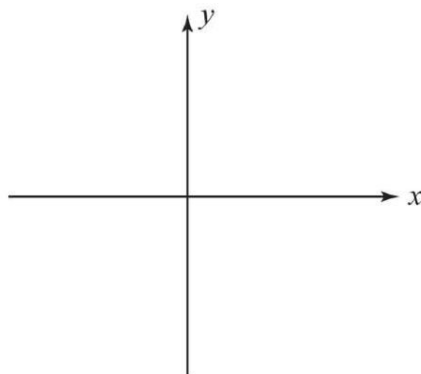


Equation: _____



Equation: _____ [2]

- (b) Sketch the graph of the remaining equation.



[1]