

Non-Calculator

Q1.

$$(3x + 1)(x - 2) + ax + b \equiv 3x^2 + 8x - 5$$

Work out the values of a and b .

$$a = \dots\dots\dots$$

$$b = \dots\dots\dots$$

(Total 4 marks)

Q2.

Given that $3^x = 9^{x+1}$ work out the value of x .

$$x = \underline{\hspace{10em}}$$

(Total 2 marks)

Q3.

- (a) Expand and simplify $(6x - 1)(2x + 3)$

Answer _____

(2)

- (b) Solve $4x^2 + x - 3 = 0$

Answer _____

(3)

(Total 5 marks)

Calculator

Q4.

- (a) Factorise $a^2 - 3a$

Answer _____

(1)

- (b) Solve $7y + 4 = 3(y + 6)$

$y =$ _____

(3)

(Total 4 marks)

Q5.

(a) Expand and simplify $5(x - 3) - 3(x - 1)$

Answer _____

(3)

(b) Solve the equation $\frac{x + 2}{2} + \frac{2x + 1}{8} = 0$

$x =$ _____

(4)

(Total 7 marks)

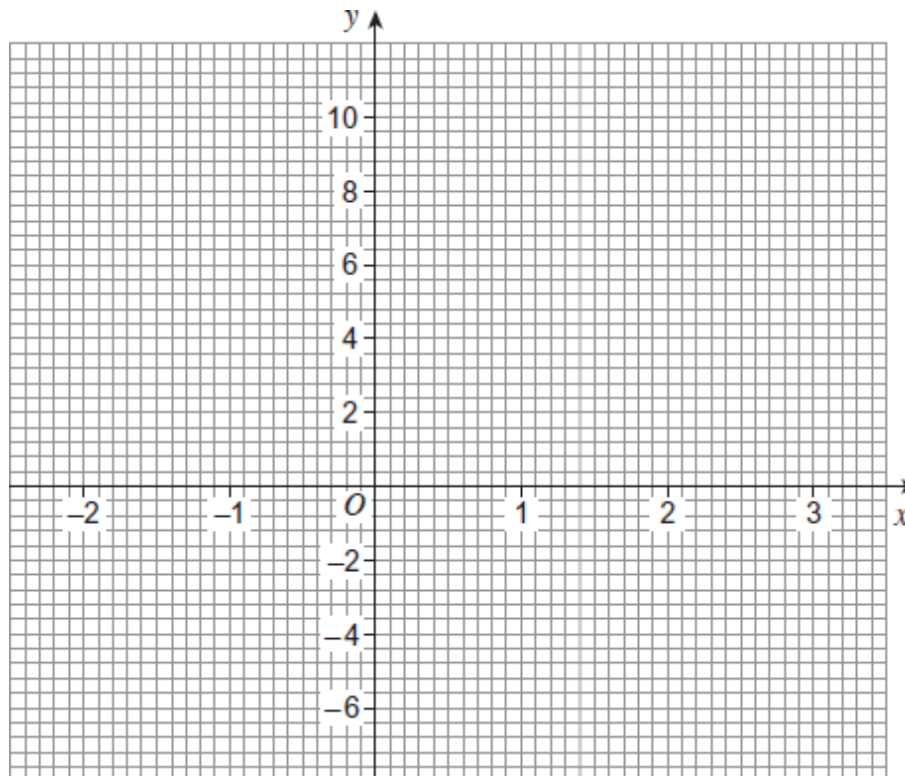
Q6.

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

x	-2	-1	0	1	2	3
y	4		-6	-5		9

(2)

- (b) On this grid, plot the graph of $y = 2x^2 - x - 6$ for values of x from -2 to 3



(2)

- (c) Use your graph to find the solutions of the equation $2x^2 - x - 6 = 0$

Answer _____ and _____

(2)

(Total 6 marks)

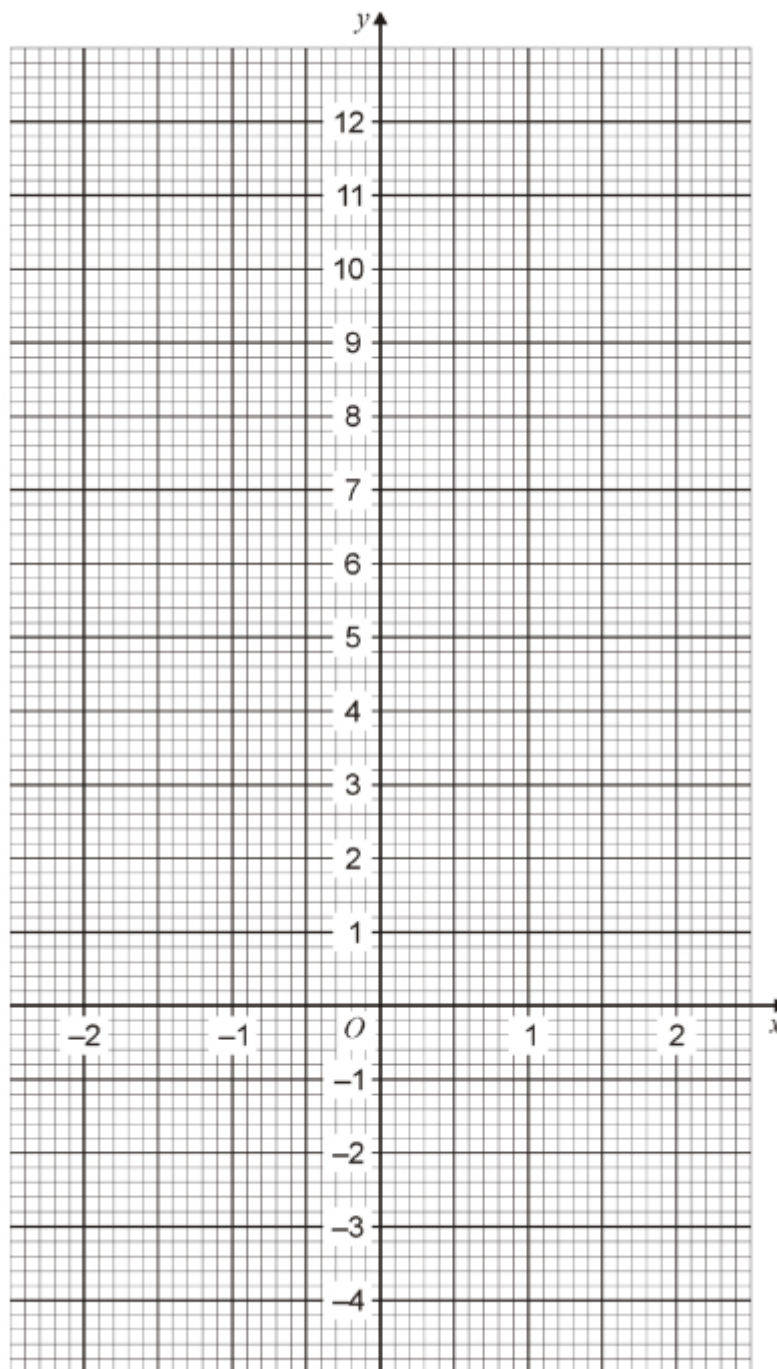
Q7.

Complete the table of values for $y = x^3 + 4$

x	-2	-1	0	1	2
y		3	4		12

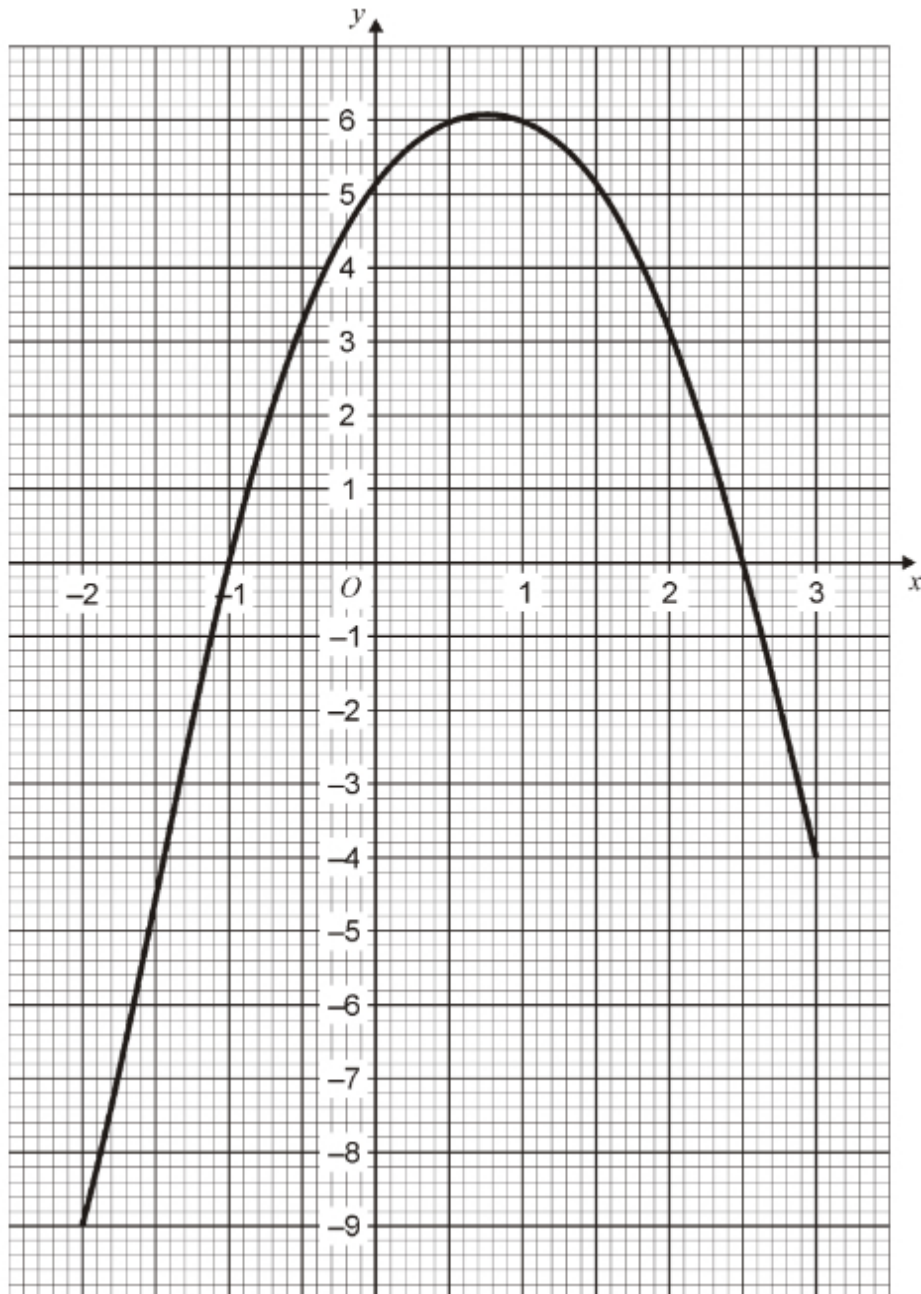
(2)

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



(2)

(c) The graph of $y = 5 + 3x - 2x^2$ is shown for values of x from -2 to 3



Write down the solutions of $5 + 3x - 2x^2 = 0$

Answer _____ and _____

(2)

(Total 6 marks)