3.15 Drawing Linear Graphs: 30-minute Pack

EDEXCEL 1MA1 · Calculator allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Plot the three points from the table on graph paper and draw the straight line joining them.

x: -2, 0, 3

y: 4, 2, -1

(Total for Question 1 is 2 marks)

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2 Write down the equation of the straight line with gradient 2 that passes through the point (0, 3).

(Total for Question 2 is 1 mark)

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3 Work out the x-intercept of the line $y = -3x + 9$. Give your answer as a number.

(Total for Question 3 is 1 mark)

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4 Complete the table for the function $y = -x + 4$ for $x = 0$, 2 and 4.

(a) Find y when $x = 0$. **(1)**

.....

(b) Find y when $x = 2$. **(1)**

.....

(c) Find y when $x = 4$. **(1)**

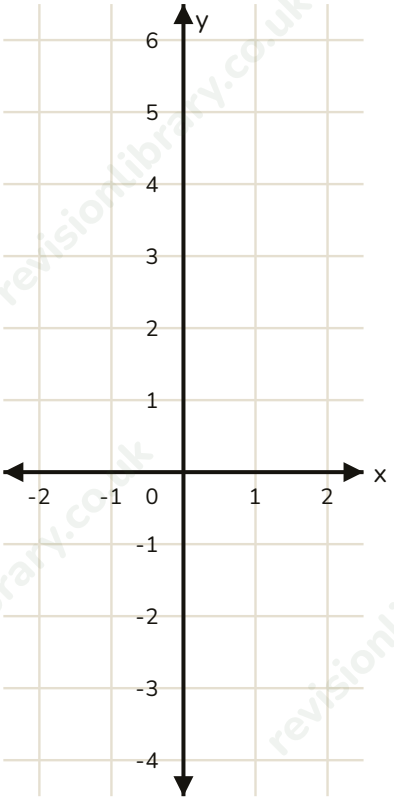
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(Total for Question 4 is 3 marks)

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5 A straight line has equation $y = -2x + 1$.

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



1 square = 1 unit

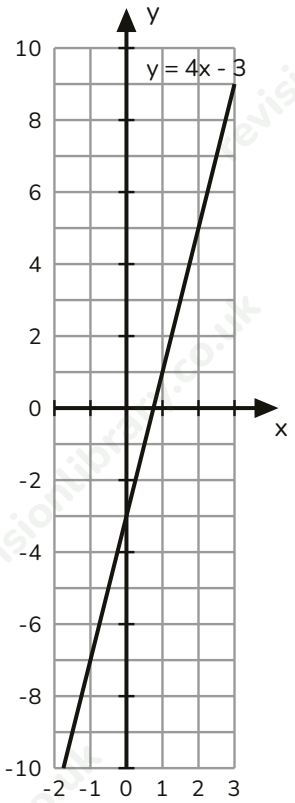
(a) Complete the table of values for $y = -2x + 1$. **(2)**

(b) Draw the graph of $y = -2x + 1$ on the grid, for values of x from -2 to 2. **(2)**

(Total for Question 5 is 4 marks)

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6 The diagram shows the graph of y = 4x - 3 drawn on a grid, for values of x from -2 to 3.



(a) Use the graph to find the value of y when x = 1.5 **(1)**

.....

(b) Use the graph to find the value of x when y = 0 **(1)**

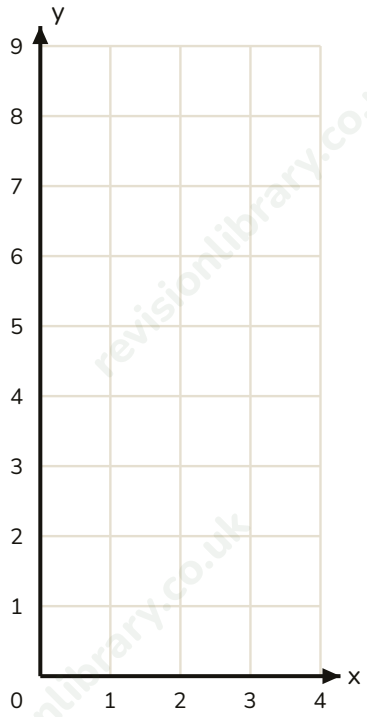
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(Total for Question 6 is 2 marks)

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7 A straight line has equation $2x + y = 8$.

x	0	1	2	3	4
y					



(a) Rearrange $2x + y = 8$ to make y the subject. **(2)**

(b) Complete a table of values for $x = 0, 1, 2, 3, 4$ and draw the graph of $2x + y = 8$ on the grid. **(2)**

(Total for Question 7 is 4 marks)

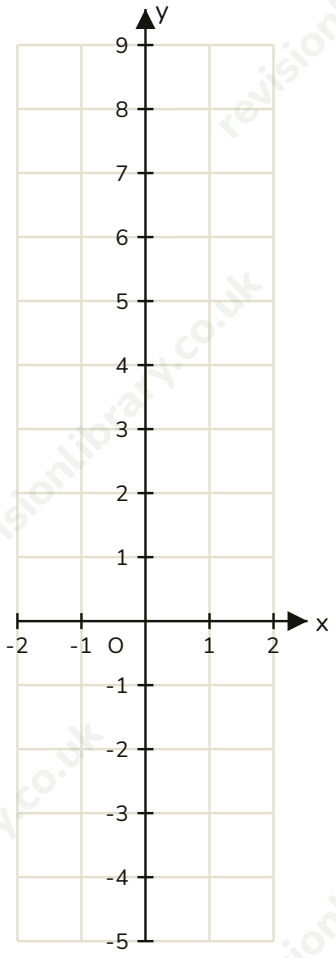
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8 Does the point (2, -10) lie on the line $y = -2x - 6$?
You must show your working.

(Total for Question 8 is 2 marks)

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9 Draw the graph of $y = 3x + 2$ for values of x from -2 to 2. You must show your table of values.



(Total for Question 9 is 3 marks)

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10 Which equation represents a straight line with gradient 4 and y-intercept -2?

- ☐ A) $y = 4x - 2$
- ☐ B) $y = -2x + 4$
- ☐ C) $y = 4x + 2$
- ☐ D) $y = 2x - 4$

(Total for Question 10 is 1 mark)

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Mark scheme · 3.15 Drawing Linear Graphs: 30-minute Pack

Question 1

at least two points plotted correctly and a straight line drawn through them (oe) **M1**

all three points plotted accurately and correct straight line (cao) **A1**

Answer: Line with equation y = -x + 2, passing through (-2,4), (0,2), (3,-1).

Question 2

y = 2x + 3 cao **B1**

Answer: y = 2x + 3

Question 3

3 cao **B1**

Answer: 3

Question 4

(a) 4 cao **B1**

(a) Answer: 4

(b) 2 cao **B1**

(b) Answer: 2

(c) 0 cao **B1**

(c) Answer: 0

Question 5

(a) at least 2 of the 3 missing values correct **B1**

(a) all 3 missing values correct: 3, 1, -1 **B1**

(a) Answer: x = -1 gives y = 3; x = 0 gives y = 1; x = 1 gives y = -1

(b) all 5 points correctly plotted ft candidate's table **B1**

(b) correct straight line drawn through the points **B1**

(b) Answer: Line through (-2,5), (-1,3), (0,1), (1,-1), (2,-3).

Question 6

(a) awrt 3 ft reading from graph **B1**

(a) Answer: 3

(b) awrt 0.75 ft reading from graph **B1**

(b) Answer: 0.75

Question 7

(a) subtracts 2x from both sides oe **M1**

(a) y = -2x + 8 oe cao **A1**

(a) Answer: y = -2x + 8

(b) all 5 points correctly plotted ft part (a): (0,8), (1,6), (2,4), (3,2), (4,0) **B1**

(b) correct straight line drawn through the points **B1**

(b) Answer: Line through (0,8), (1,6), (2,4), (3,2), (4,0).

Question 8

substitutes x = 2 to get y = -10 **M1**

correct conclusion with a comparison **A1**

Answer: Yes

Question 9

at least 3 correct points from a table of values for y = 3x + 2 **B1**

correct straight line drawn through the points (B1 for a line that is only partially correct or too short) **B2**

Answer: Points: (-2,-4), (-1,-1), (0,2), (1,5), (2,8); straight line through all of them.

Question 10

A cao **B1**

Answer: A) y = 4x - 2

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