



3.15D Drawing Linear Graphs: Fluency and Exam Drill

EDEXCEL Edexcel 1MA1 · Calculator allowed · about 40 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: -1, 0, 2

y: -1, 1, 5

(Total for Question 1 is 2 marks)

- 2** 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 2 is 2 marks)

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

x: 0, 1, 2

y: 0, 3, 6

(Total for Question 3 is 2 marks)

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

x: 0, 2, 4

y: -1, 0, 1

(Total for Question 4 is 2 marks)

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

x: 0, 1, 2

y: 5, 3, 1

(Total for Question 5 is 2 marks)

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

x: 2, 4, 6

y: -2, 0, 2

(Total for Question 6 is 2 marks)

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

x: -3, 0, 6

y: 4, 3, 1

(Total for Question 7 is 2 marks)

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

x: 0, 2, 4

y: -1, 2, 5

(Total for Question 8 is 2 marks)

9 The table shows values of y for a straight line. Plot the points and draw the straight line. Then use your line to find y when $x = 3$.

x: 0, 2, 4

y: 1, 3, 5

(a) Plot the points and draw the straight line. (2)

(b) Use your line to work out the value of y when $x = 3$. (1)

(Total for Question 9 is 3 marks)

- 10** The table gives two values for x and y on a straight line. Find the equation of the line. Then use the equation to find x when $y = 10$.

x : 1, 3

y : 4, 8

- (a)** Find the equation of the straight line in the form $y = mx + c$. (2)

- (b)** Work out the value of x when $y = 10$. (2)

(Total for Question 10 is 4 marks)

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- 11** A straight line passes through the points (0, -2) and (6, 4). Work out the x -intercept of the line (the value of x when $y = 0$).

(Total for Question 11 is 3 marks)

- 12** A taxi company charges a fare y (in pounds) according to the rule $y = 1.5x + 2$, where x is the distance in miles. Complete the table, plot the points and draw the straight line. Then estimate the distance when the fare is £11.50.

x : 0, 2, 4, 6

y :

- (a) Complete the table and plot the points, then draw the straight line. (2)
- (b) Estimate the distance x when the fare is £11.50, using your plotted line or the equation. (2)

(Total for Question 12 is 4 marks)

Mark scheme · 3.15D Drawing Linear Graphs: Fluency and Exam Drill

Question 1

- **M1** at least two points plotted correctly and a straight line drawn through them (oe)
- **A1** all three points plotted accurately and correct straight line (cao)
- **Answer: Line with equation $y = 2x + 1$, passing through $(-1,-1)$, $(0,1)$, $(2,5)$. (All three points plotted and a straight line drawn.)**

Question 2

- **M1** at least two points plotted correctly and a straight line drawn through them (oe)
- **A1** all three points plotted accurately and correct straight line (cao)
- **Answer: Line with equation $y = -x + 2$, passing through $(-2,4)$, $(0,2)$, $(3,-1)$.**

Question 3

- **M1** at least two points plotted correctly and a straight line drawn through them (oe)
- **A1** all three points plotted accurately and correct straight line (cao)
- **Answer: Line with equation $y = 3x$, passing through $(0,0)$, $(1,3)$, $(2,6)$.**

Question 4

- **M1** at least two points plotted correctly and a straight line drawn through them (oe)
- **A1** all three points plotted accurately and correct straight line (cao)
- **Answer: Line with equation $y = \frac{1}{2}x - 1$, passing through $(0,-1)$, $(2,0)$, $(4,1)$.**

Question 5

- **M1** at least two points plotted correctly and a straight line drawn through them (oe)
- **A1** all three points plotted accurately and correct straight line (cao)
- **Answer: Line with equation $y = -2x + 5$, passing through $(0,5)$, $(1,3)$, $(2,1)$.**

Question 6

- **M1** at least two points plotted correctly and a straight line drawn through them (oe)
- **A1** all three points plotted accurately and correct straight line (cao)
- **Answer: Line with equation $y = x - 4$, passing through $(2,-2)$, $(4,0)$, $(6,2)$.**

Question 7

- **M1** at least two points plotted correctly and a straight line drawn through them (oe)
- **A1** all three points plotted accurately and correct straight line (cao)
- **Answer: Line with equation $y = -\frac{1}{3}x + 3$, passing through $(-3,4)$, $(0,3)$, $(6,1)$.**

Question 8

- **M1** at least two points plotted correctly and a straight line drawn through them (oe)
- **A1** all three points plotted accurately and correct straight line (cao)
- **Answer: Line with equation $y = \frac{3}{2}x - 1$, passing through $(0,-1)$, $(2,2)$, $(4,5)$.**

Question 9

- (a) **M1** at least two points plotted correctly and a straight line drawn through them (oe)
- (a) **A1** all three points plotted accurately and correct straight line (cao)
- (a) **Answer: Line with equation $y = x + 1$, passing through $(0,1)$, $(2,3)$, $(4,5)$.**
- (b) **A1** 4 cao ft from correct line
- (b) **Answer: 4**

Question 10

- (a) **M1** correct method to find gradient: $(8 - 4) / (3 - 1) = 2$
- (a) **A1** $y = 2x + 2$ cao
- (a) **Answer: $y = 2x + 2$**
- (b) **M1** substitute and solve: $10 = 2x + 2 \rightarrow 2x = 8 \rightarrow x = 4$
- (b) **A1** 4 cao
- (b) **Answer: 4**

Question 11

- **M1** find gradient: $(4 - (-2)) / (6 - 0) = 6/6 = 1$
- **M1** use $y = mx + c$ with known point to find equation: $y = 1x - 2$
- **A1** x-intercept = 2 cao
- **Answer: 2**

Question 12

- (a) **M1** correct method to find two or more y values and at least two points plotted (oe)
- (a) **A1** all four y values correct and correct straight line drawn (cao)
- (a) **Answer: y values: 2, 5, 8, 11 for x = 0,2,4,6 respectively. Line $y = 1.5x + 2$.**
- (b) **M1** use equation or reading from graph: $11.5 = 1.5x + 2 \rightarrow 1.5x = 9.5 \rightarrow x = 9.5/1.5$
- (b) **A1** 6.33 cao, or 6.3 to 2 s.f. (awrt)
- (b) **Answer: 6.33 (miles) awrt**