



5.15F Equation of a Line: Foundation Tier Practice

EDEXCEL Edexcel 1MA1 · Calculator allowed · about 65 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** Work out y when $x = 4$ for the equation $y = 2x + 3$.

(Total for Question 1 is 1 mark)

- 2** Work out x when $y = 10$ for the equation $y = 3x - 5$.

(Total for Question 2 is 1 mark)

- 3** Find the gradient of the line passing through the points (1, 2) and (4, 8).

(Total for Question 3 is 1 mark)

- 4** Write down the equation of the line with gradient $\frac{1}{2}$ that passes through the point (0, -3). Give your answer in the form $y = mx + c$.

(Total for Question 4 is 2 marks)

5 The line has equation $y = -x + 4$.

Part (a) Work out y when $x = 2$.

Part (b) Work out y when $x = -1$.

(a) Work out y when $x = 2$.

(1)

(b) Work out y when $x = -1$.

(1)

(Total for Question 5 is 2 marks)

6 Solve $2x + 3 = -x + 9$.

(Total for Question 6 is 2 marks)

7 Given $y = 3x - 6$, work out the x -intercept and the y -intercept of this line.

(Total for Question 7 is 2 marks)

8 A taxi company charges a fixed flag drop of 2.50 pounds plus 0.80 pounds for each kilometre. The fare is given by $F = 2.50 + 0.80d$, where d is the distance in kilometres and F is the fare in pounds.

Part (a) Calculate the fare for a 10 km journey.

Part (b) Find the distance d when the fare is 10.00 pounds. Give your answer to 1 decimal place if needed.

(a) Calculate the fare for a 10 km journey.

(1)

(b) Find the distance d when the fare is 10.00 pounds.

(2)

(Total for Question 8 is 3 marks)

- 9** The line l has equation $y = -\frac{1}{2}x + 4$.
Find the equation of the line m that is parallel to l and passes through the point $(4, 1)$. Give your answer in the form $y = mx + c$.

(Total for Question 9 is 2 marks)

- 10** A line passes through the point $(2, 5)$ and has a y -intercept of 1. Find the equation of the line in the form $y = mx + c$.

(Total for Question 10 is 2 marks)

- 11** Find the equation of the line passing through the points $(-1, 2)$ and $(3, 10)$. Give your answer in the form $y = mx + c$.

(Total for Question 11 is 3 marks)

- 12** A line has equation $y = 4x - 7$. State whether the point $(3, 5)$ lies on this line. Show your working.

(Total for Question 12 is 2 marks)

Mark scheme · 5.15F Equation of a Line: Foundation Tier Practice

Question 1

- **B1** $y = 11$ cao
- **Answer: 11**

Question 2

- **B1** $x = 5$ cao
- **Answer: 5**

Question 3

- **B1** gradient = 2 cao
- **Answer: 2**

Question 4

- **M1** substitute gradient and point into $y = mx + c$ to find c , or state $c = -3$
- **A1** $y = \frac{1}{2}x - 3$ cao
- **Answer: $y = \frac{1}{2}x - 3$**

Question 5

- (a) **B1** $y = 2$ cao
- (a) **Answer: 2**
- (b) **B1** $y = 5$ cao
- (b) **Answer: 5**

Question 6

- **M1** collect terms to get $3x = 6$ or equivalent method
- **A1** $x = 2$ cao
- **Answer: 2**

Question 7

- **M1** find x-intercept by setting $y = 0$ to get $x = 2$, or find y-intercept as $c = -6$
- **A1** x-intercept (2, 0) and y-intercept (0, -6) cao
- **Answer: x-intercept (2, 0); y-intercept (0, -6)**

Question 8

- (a) **B1** $F = 10.50$ cao
- (a) **Answer: 10.50**
- (b) **M1** set up $10.00 = 2.50 + 0.80d$ and isolate d
- (b) **A1** $d = 9.375$ so $d = 9.4$ km awrt
- (b) **Answer: 9.4 km**

Question 9

- **M1** use same gradient $-1/2$ and substitute point to find c
- **A1** $y = -1/2x + 3$ cao
- **Answer: $y = -1/2x + 3$**

Question 10

- **M1** find gradient $m = (5 - 1)/(2 - 0) = 2$ or equivalent method
- **A1** $y = 2x + 1$ cao
- **Answer: $y = 2x + 1$**

Question 11

- **M1** find gradient $m = (10 - 2)/(3 - (-1)) = 8/4 = 2$
- **M1** substitute a point into $y = 2x + c$ to find c
- **A1** $y = 2x + 4$ cao
- **Answer:** $y = 2x + 4$

Question 12

- **M1** substitute $x = 3$ into $y = 4x - 7$ to get $y = 5$
- **A1** yes, $(3, 5)$ lies on the line cao
- **Answer:** Yes, $(3, 5)$ lies on the line since $y = 4(3) - 7 = 5$.