FOUNDATION & HIGHER

SAME AT BOTH TIERS

Name ..... Class .....

A10: Gradients and intercepts

Identify and interpret gradients and intercepts of linear functions

20 marks · 25 minutes · Non-calculator

1) For the line $y = 5 - 2x$, write down

(a) the gradient

.....

(1)

(b) the y-intercept

.....

(1)

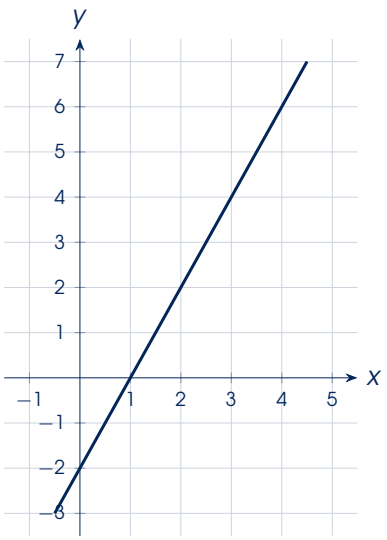
[Question 1: 2 marks]

2) Find the gradient of the line $4x + 2y = 10$

.....

[Question 2: 2 marks]

3) Here is a straight line drawn on a grid.

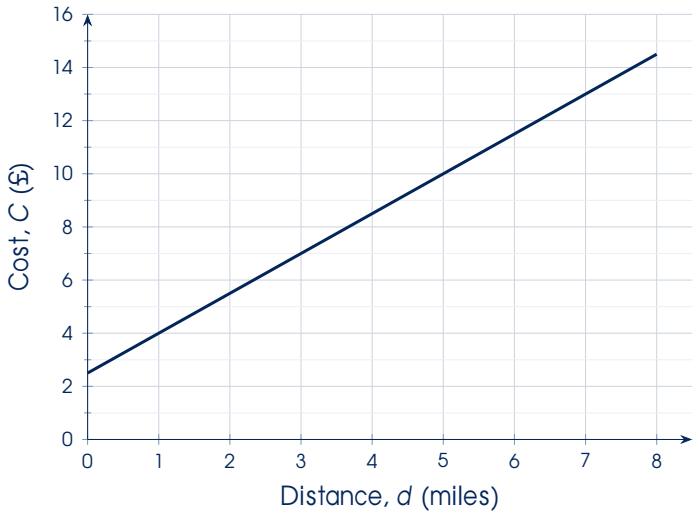


Find the equation of the line.

. . . . . .

[Question 3: 3 marks]

4) The graph shows the cost, C pounds, of a taxi journey of d miles.



(a) What does the intercept on the C axis represent?

.....

(1)

(b) Find the gradient of the line and say what it represents.

.....

(2)

[Question 4: 3 marks]

5) For the line $2y - 6x = 8$, find

(a) the gradient

.....

(1)

(b) the y-intercept

.....

(1)

[Question 5: 2 marks]

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6) Find the gradient of the line joining $(1, 7)$ and $(4, -2)$.

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[Question 6: 2 marks]

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7) A plumber charges C pounds for a job lasting h hours, where $C = 40 + 25h$

(a) What does the 40 represent?

.....

(1)

(b) What does the 25 represent?

.....

(1)

[Question 7: 2 marks]

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8) A line has gradient 4 and passes through $(2, 3)$. Find its y-intercept.

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[Question 8: 2 marks]

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9) (a) Write down the equation of the line with gradient $-\frac{1}{2}$ and y-intercept 3

.....

(1)

(b) Does this line slope upwards or downwards from left to right?

.....

(1)

[Question 9: 2 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	(a) -2 (b) 5	B1 each (accept $(0, 5)$).
2	-2	$y = 5 - 2x$ (M1); A1.
3	$y = 2x - 2$	Gradient 2 (B1); intercept -2 (B1); full equation (B1).
4	(a) Fixed charge £2.50 (b) 1.5	(a) B1. (b) e.g. $\frac{8.5 - 2.5}{4}$ (M1); 1.5, cost per mile is £1.50 (A1).
5	(a) 3 (b) 4	B1 each (via $y = 3x + 4$).
6	-3	$\frac{-2 - 7}{4 - 1}$ (M1); A1.
7	(a) Fixed (call-out) charge of £40 (b) Cost per hour, £25	B1 each.
8	-5	$3 = 8 + c$ (M1); A1.
9	(a) $y = -\frac{1}{2}x + 3$ (b) downwards	B1 each.