FOUNDATION & HIGHER

HIGHER EXTENDS

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

A9: Straight-line graphs

Plot straight lines; parallel and perpendicular lines; find equations of lines

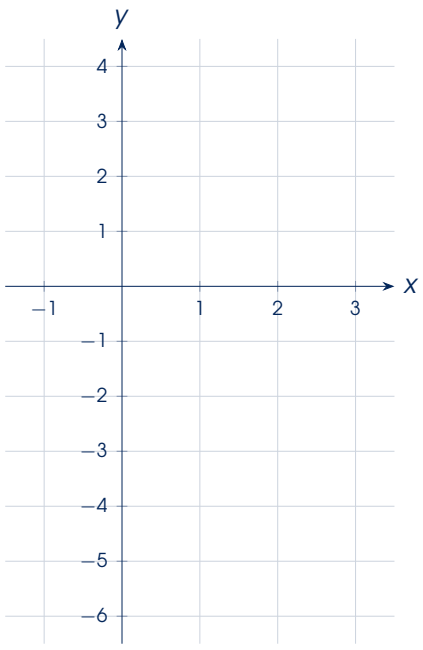
20 marks · 25 minutes · Non-calculator

1) (a) Fill in the table of values for $y = 2x - 3$

x	-1	0	1	2	3
y					

(2)

(b) Plot the graph of $y = 2x - 3$ for $-1 \leqslant x \leqslant 3$



(2)

[Question 1: 4 marks]

2) Line L has equation $y = 4x - 1$. Write down the equation of the line parallel to L that passes through $(0, 5)$.

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[Question 2: 1 marks]

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3) Find the equation of the line through $(2, 3)$ and $(6, 11)$.

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[Question 3: 3 marks]

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4) Find the equation of the line perpendicular to $y = 3x + 2$ that passes through $(6, 1)$.

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[Question 4: 2 marks]

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5) Which two of these lines are parallel?

$y = 3x + 1$ $\quad y = 1 + 2x$ $\quad 2y = 6x - 5$ $\quad y = -3x + 4$

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[Question 5: 1 marks]

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6) Find the equation of the line with gradient -2 that passes through $(3, 1)$.

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[Question 6: 2 marks]

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7) Find the equation of the line through $(-1, 4)$ and $(3, -4)$.

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[Question 7: 3 marks]

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8) Line L has equation $y = \frac{1}{2}x + 3$. Find the equation of the line perpendicular to L that passes through $(2, 5)$.

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[Question 8: 2 marks]

9) Does the point $(4, 11)$ lie on the line $y = 3x - 1$? Show your working.

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[Question 9: 2 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	(a) $-5, -3, -1, 1, 3$ (b) straight line	(a) B2 all correct (B1 for 3 or 4 correct). (b) Points plotted (M1); straight line from $(-1, -5)$ to $(3, 3)$ (A1).
2	$y = 4x + 5$	B1.
3	$y = 2x - 1$	Gradient $\frac{11-3}{6-2} = 2$ (M1); substitute a point (M1); A1.
4	$y = -\frac{1}{3}x + 3$	Gradient $-\frac{1}{3}$ (M1); A1 (accept $x + 3y = 9$).
5	$y = 3x + 1$ and $2y = 6x - 5$	B1.
6	$y = -2x + 7$	$1 = -6 + c$ (M1); A1.
7	$y = -2x + 2$	Gradient $\frac{-8}{4} = -2$ (M1); substitute a point (M1); A1.
8	$y = -2x + 9$	Gradient -2 (M1); A1.
9	Yes	$3 \times 4 - 1 = 11$ (M1); yes (A1).