Name: _____

GCSE (1 – 9)

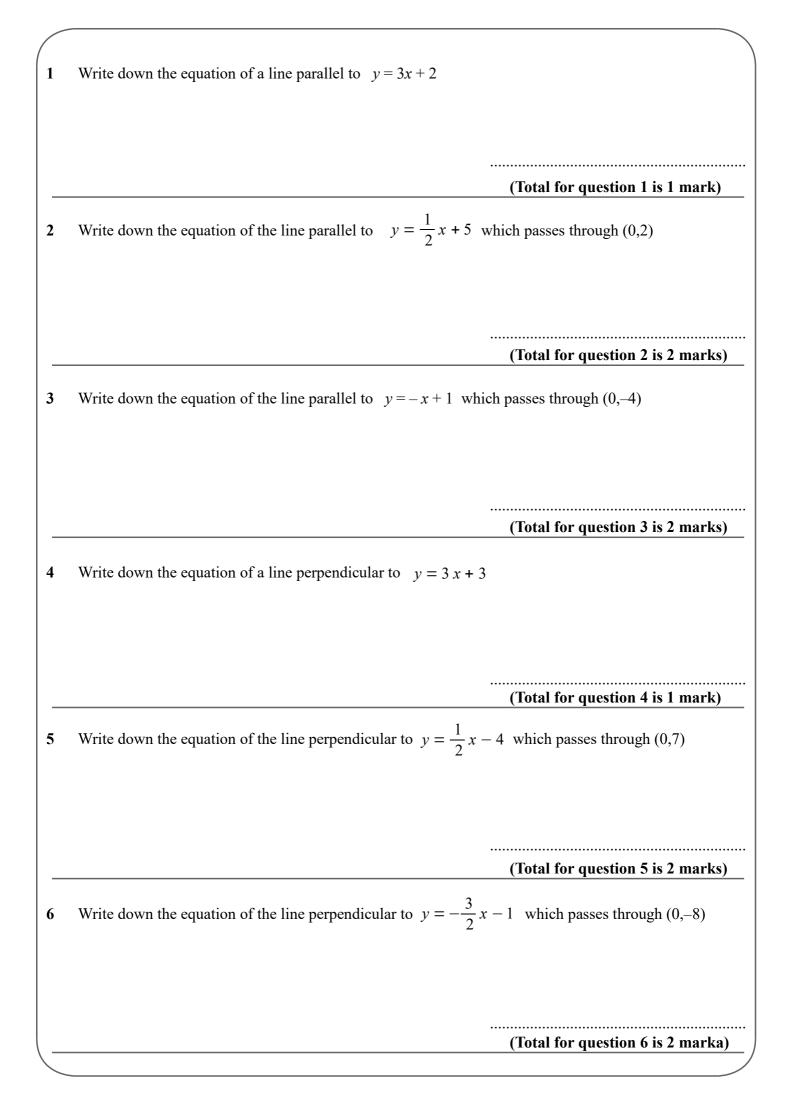# Parallel and Perpendicular Lines

Instructions

• Use **black** ink or ball-point pen.
• Answer all questions.
• Answer the questions in the spaces provided
– *there may be more space than you need.*
• Diagrams are **NOT** accurately drawn, unless otherwise indicated.
• You must **show all your working out.**

Information

• The marks for each question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

• Read each question carefully before you start to answer it.
• Keep an eye on the time.
• Try to answer every question.
• Check your answers if you have time at the end

1 Write down the equation of a line parallel to $y = 3x + 2$

....
(Total for question 1 is 1 mark)

2 Write down the equation of the line parallel to $y = \dfrac{1}{2}x + 5$ which passes through (0,2)

....
(Total for question 2 is 2 marks)

3 Write down the equation of the line parallel to $y = -x + 1$ which passes through (0,–4)

....
(Total for question 3 is 2 marks)

4 Write down the equation of a line perpendicular to $y = 3x + 3$

....
(Total for question 4 is 1 mark)

5 Write down the equation of the line perpendicular to $y = \dfrac{1}{2}x - 4$ which passes through (0,7)

....
(Total for question 5 is 2 marks)

6 Write down the equation of the line perpendicular to $y = -\dfrac{3}{2}x - 1$ which passes through (0,–8)

....
(Total for question 6 is 2 marka)

7   Find the equation of the line parallel to $2y - 3x + 2 = 0$ which passes through $(0,4)$

....
(Total for question 7 is 2 marks)

8   Find the equation of the line parallel to $2x + 5y = 10$ which passes through $(0,-3)$

....
(Total for question 8 is 2 marks)

9   Find the equation of the line perpendicular to $5y = 2x - 4$ which passes through $(0,7)$

....
(Total for question 9 is 2 marks)

10 Here are the equations of five straight lines.

Line A $y = 2x - 3$
Line B $2y = x + 3$
Line C $4y = 3x - 2$
Line D $2y = 4x - 1$
Line E $3y = 2x - 2$

Two of these lines are parallel.

Write down the two parallel lines.

Line .... and Line ....
(Total for question 10 is 1 mark)

11 Here are the equations of five straight lines.

Line A $y + 3x = 4$
Line B $2y = x + 1$
Line C $y + 2x = 3$
Line D $y = 4x - 2$
Line E $2y = 2x - 1$

Two of these lines are perpendicular.

Write down the two perpendicular lines.

Line .... and Line ....
(Total for question 11 is 1 mark)

12   Line A passes through the points (2, 1) and (5, 10)
Find the equation of the line parallel to A that passes through (2,5)

....
(Total for question 12 is 3 marks)

13   Line A passes through the points (1, 5) and (5, 7)
Find the equation of the line perpendicular to A that passes through (-1,7)

....
(Total for question 13 is 2 marks)

14 Line A passes through the points (-2, 1) and (4, 10)
Find the equation of the line parallel to A that passes through (2,7)

....
(Total for question 14 is 3 marks)

15 Line A passes through the points (2, -5) and (10, -1)
Find the equation of the line perpendicular to A that passes through (4,3)

....
(Total for question 15 is 2 marks)

16 Line A passes through the points (2, 1) and (5, 10)
Line B passes through the points (4, 7) and (2, 1)
Show that Line A and Line B are parallel.

17 Line A passes through the points (1, 5) and (5, 7)
Line B passes through the points (-1, 7) and (2, 1)
Show that Line A and Line B are perpendicular.

18 Line A passes through the points (3, 6) and (5, -2)
Line B passes through the points (2, 5) and (8, k)

Line A and Line B are parallel.

Find the value of k.

$k =$ ....

(Total for question 18 is 4 marks)

19 Line A passes through the points (-3, -1) and (-1, 9)
Line B passes through the points (-2, 1) and (k, 4)

Line A and Line B are perpendicular.

Find the value of k.

$k =$ ....

(Total for question 19 is 4 marks)