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 $y = 3x + 2$

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

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

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

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

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

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)
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.

(Total for question 16 is 4 marks)

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.

(Total for question 17 is 4 marks)
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)

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)