AQA, OCR, Edexcel

GCSE

GCSE Maths

Parallel and Perpendicular Lines Answers

Name:

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Total Marks: /28

Parallel and Perpendicular lines

1. Give the equation of a line that is parallel to the equation $y = 3x + 4$.
   - $y = 3x + c,$ *where c can be any constant you like*!

(1 Mark)

2. Give the equation of a line which is parallel to the equation $2y = 3x + 4$.
   - $y = \frac{3}{2}x + c,$ *where c can be any constant you like*!

(2 Marks)

3. Give the equation of a line that is perpendicular to $y = 3x + 4$.
   - $y = -\frac{1}{3}x + c,$ *where c can be any constant you like*!

(2 Marks)

4. Give the equation of a line that is perpendicular to $y = -2x + 3$.
   - $y = \frac{1}{2}x + c,$ *where c can be any constant you like*!

(2 marks)

5. Give the equation of a line that is perpendicular to $y = \frac{2}{3}x + 3$.
   - $y = -\frac{3}{2}x + c,$ *where c can be any constant you like*!

(2 Marks)

6. Find the equation of the line that passes through the point (5,4) and is perpendicular to $y = 3x + 4$.
   - $y = \frac{1}{3}(17 - x)$

(3 Marks)

7. Find the equation of the line that passes through the point (1,10) and is perpendicular to $y = -\frac{1}{2}x + 10$.
   - $y = 2x + 8$

(3 Marks)

8. Find the equation of the line that passes through the point (-1,-5) and is perpendicular to $y = \frac{1}{3}x - 2$.
   - $y = -3x - 8$

(3 Marks)

9. Find the equation of the line that is parallel to $2y = 3(2 - 3x)$ and passes through the point of intersection of the lines $y = x + 8$ and $y = -3x + 4$. (Hard)
   - $y = \frac{1}{2}(5 - 9x)$

(6 Marks)

10. Emma Plots the points A(-9,6) and B(-4,4). She claims that line AB will be perpendicular to the $y = 3x - 5$.
    Is she correct? Explain your answer.

    No, she is incorrect! The gradient of the line through A and B is $-\frac{2}{5}$.
    Thus, any line perpendicular to AB has gradient $\frac{5}{2}$. But, the line
    $y = 3x - 5$ has gradient 3. Thus, AB is not perpendicular to $y = 3x - 5$.

    (4 Marks)