



eClassroom

Question 1

The line l_1 has equation:

$$3x - 4y + 12 = 0.$$

(a) Find the gradient of l_1 .

(1 mark)

Given that:

- The point A has coordinates $(4, 2)$,
- The line l_2 passes through A and is perpendicular to l_1 ,

(b) Find the equation of l_2 , giving your answer in the form $y = mx + c$, where m and c are constants to be found.

(3 marks)

The lines l_1 and l_2 intersect at the point M .

(c) Using algebra and showing all your working, find the coordinates of M .

(Solutions relying on calculator technology are not acceptable.)

(3 marks)

Given that the diagonals of a square $ABCD$ meet at M :

(d) Find the coordinates of the point C .

(2 marks)

Total for question = 9 marks





This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper appears to be a standard notebook page or a sheet of stationery.



Total for question = 5 marks

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Question 4

A tree was planted in the ground.

- Exactly **3 years** after it was planted, the height of the tree was **12 m**.
- Exactly **7 years** after it was planted, the height of the tree was **20 m**.

Given that the height, H metres, of the tree t years after it was planted in the ground, can be modeled by the equation:

$$H = at + b,$$

where a and b are constants:

(a) Find the value of a and the value of b .

(4 marks)

(b) State, according to the model, the height of the tree when it was planted.

(1 mark)



