2. The line l_1 has equation $y = 10 - 3x$

The line l_2

- is perpendicular to l_1
- intersects l_1 at the point P with x coordinate 4

(a) Find an equation for l_2 writing the answer in the form $ax + by + c = 0$, where a, b and c are integers.

(3)

Given that

- line l_1 cuts the y-axis at the point M
- line l_2 cuts the y-axis at the point N

(b) find the area of triangle MPN, making your method clear.

(3)

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Question 2 continued

(Total for Question 2 is 6 marks)

3. A triangular plot of land, ABC, has area $60\ \text{m}^2$

Given

- $AB = 15\ \text{m}$
- $AC = 10\ \text{m}$
- angle $BAC = \theta°$

(a) show that $\sin\theta° = \frac{4}{5}$

(1)

Given also that $\theta°$ is the **largest** angle in the triangle,

(b) find the length of the side BC, in metres, to 3 significant figures,

(3)

(c) find the size of the **smallest** angle in the triangle, in degrees, to one decimal place.

(2)

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