2. The triangle ABC is such that

- $AB = 15\,\text{cm}$
- $AC = 25\,\text{cm}$
- angle $BAC = \theta°$
- area triangle $ABC = 100\,\text{cm}^2$

(a) Find the value of $\sin \theta°$

(2)

Given that $\theta > 90$

(b) find the length of BC, in cm, to 3 significant figures.

(3)

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Question 2 continued

(Total for Question 2 is 5 marks)

3. The curve C has equation

$$y = \frac{5x^3 - 8}{2x^2} \qquad x > 0$$

(a) Find $\frac{dy}{dx}$ writing your answer in simplest form.

(4)

The point $P(2, 4)$ lies on C.

(b) Find an equation for the tangent to C at P writing your answer in the form $ax + by + c = 0$, where a, b and c are integers.

(3)

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