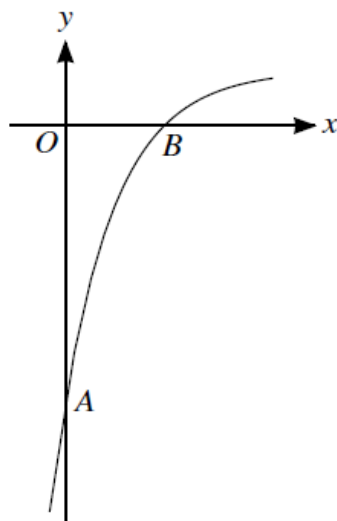


1. Nov/2021/Paper_9709/21/No.5



The diagram shows the curve with parametric equations

$$x = \ln(2t + 3), \quad y = \frac{2t - 3}{2t + 3}.$$

The curve crosses the y -axis at the point A and the x -axis at the point B .

(a) Show that $\frac{dy}{dx} = \frac{6}{2t + 3}$.

[4]

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(b) Find the gradient of the curve at A .

[2]

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(c) Find the gradient of the curve at B .

[2]

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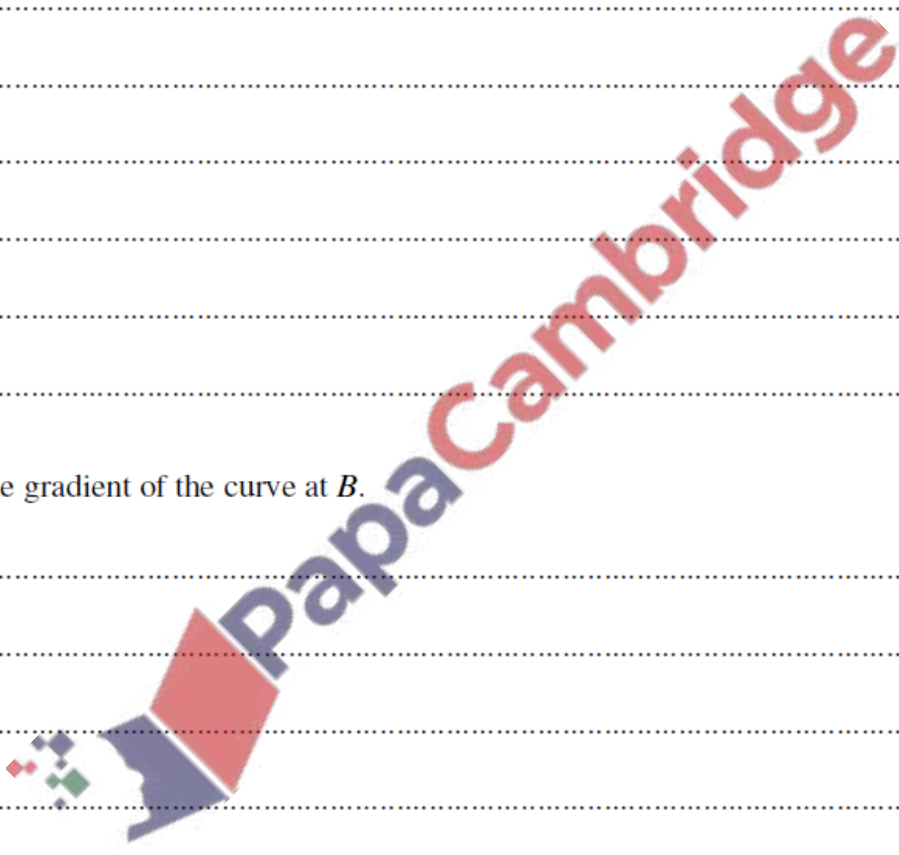
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3. Nov/2021/Paper_9709/22/No.5

A curve has equation $x^2 + 4x \cos 3y = 6$.

Find the exact value of the gradient of the normal to the curve at the point $(\sqrt{2}, \frac{1}{12}\pi)$. [6]

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