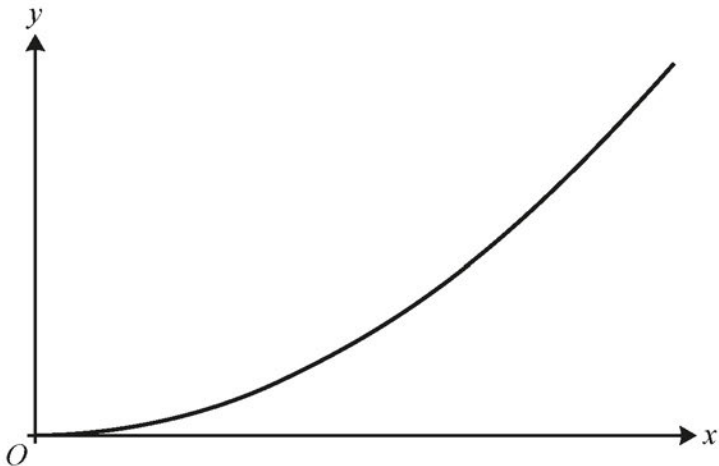


11 (a) Use the substitution $u^2 = x^2 + 3$ to show that $\int \frac{4x^3}{\sqrt{x^2+3}} dx = \frac{4}{3}(x^2 - 6)\sqrt{x^2+3} + c$. [5]

(b) In this question you must show detailed reasoning.



The graph shows part of the curve $y = \frac{4x^3}{\sqrt{x^2+2}}$.

Find the exact area enclosed by the curve $y = \frac{4x^3}{\sqrt{x^2+3}}$, the normal to this curve at the point (1, 2) and the x -axis. [7]

POST-EXAM CORRECTION

Wednesday 6 October 2021 – Afternoon

A Level Mathematics A

H240/01 Pure Mathematics

If you wish to use the published question paper as practice material, please make the following correction:

Turn to **page 7** of the **question paper** and look at **question 11(b)**.

In the first line below the graph cross out $y = \frac{4x^3}{\sqrt{x^2 + 2}}$ and replace it with $y = \frac{4x^3}{\sqrt{x^2 + 3}}$.

The question should now read:

The graph shows part of the curve $y = \frac{4x^3}{\sqrt{x^2 + 3}}$.