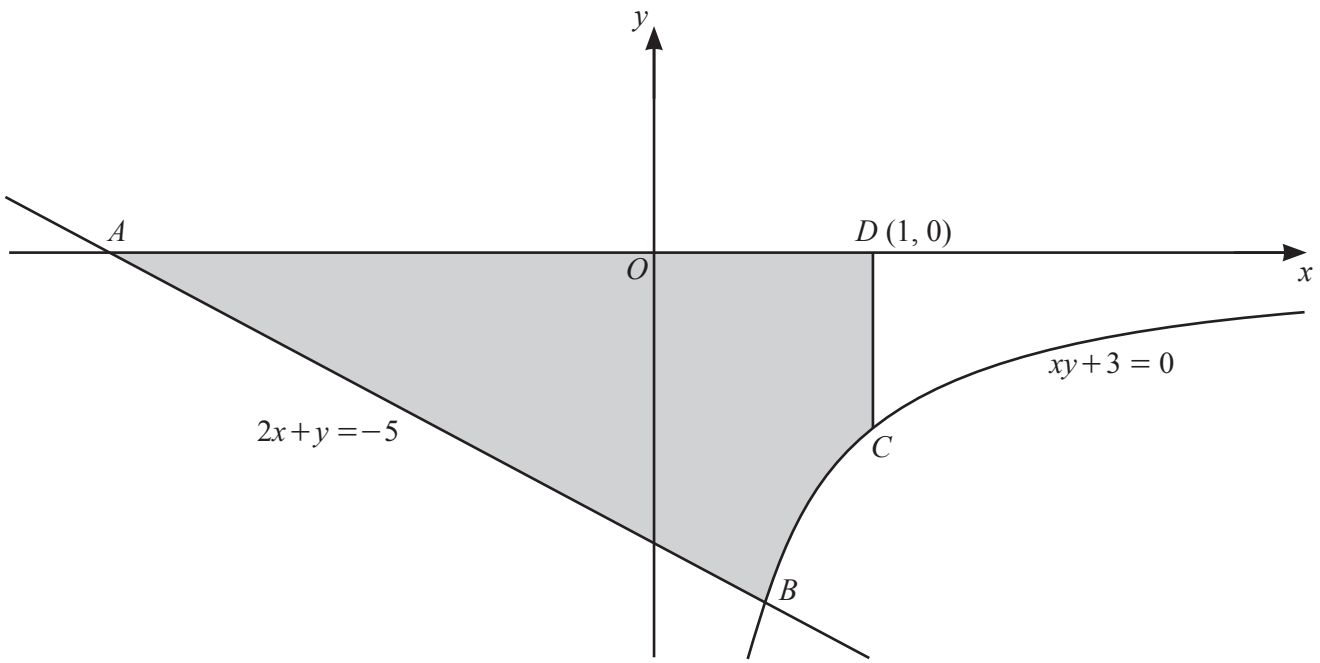
6



The diagram shows the straight line $2x+y=-5$ and part of the curve $xy+3=0$. The straight line intersects the x-axis at the point A and intersects the curve at the point B. The point C lies on the curve. The point D has coordinates $(1, 0)$. The line CD is parallel to the y-axis.

(a) Find the coordinates of each of the points A and B. [3]

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(b) Find the area of the shaded region, giving your answer in the form $p + \ln q$, where p and q are positive integers. [6]

7 **(a)** Given that $y = \left(x^2 - 1\right)\sqrt{5x+2}$, show that $\frac{\mathrm{d}y}{\mathrm{d}x} = \frac{Ax^2 + Bx + C}{2\sqrt{5x+2}}$, where A, B and C are integers. [5]