10 **(a)** Find $\int_1^\infty \frac{1}{(3x-2)^{\frac{3}{2}}}\,\mathrm{d}x$. [4]

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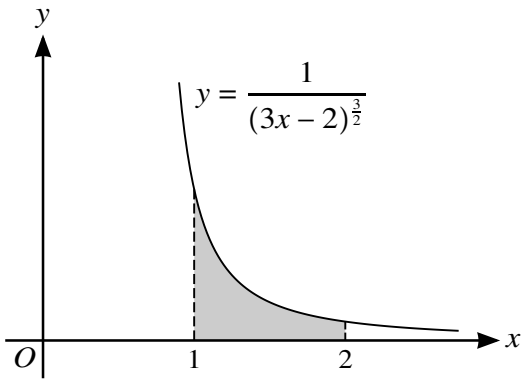

The diagram shows the curve with equation $y = \frac{1}{(3x-2)^{\frac{3}{2}}}$. The shaded region is bounded by the curve, the x-axis and the lines $x = 1$ and $x = 2$. The shaded region is rotated through 360° about the x-axis.

(b) Find the volume of revolution. [4]

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The normal to the curve at the point (1, 1) crosses the y-axis at the point A.

(c) Find the y-coordinate of A. [4]

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