

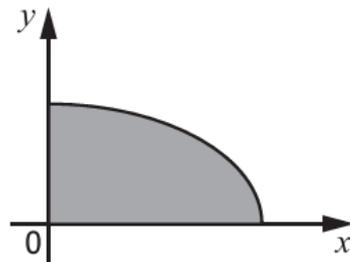
**Advanced Higher Maths**  
**SQA 2017 Paper**  
**Question 16**



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On a suitable domain, a curve is defined by the equation  $4x^2 + 9y^2 = 36$ .

A section of the curve in the first quadrant, illustrated in the diagram below, is rotated  $360^\circ$  about the  $y$ -axis.



Calculate the exact value of the volume generated.

5

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Answer:

$12\pi$  (cubic units)