

7

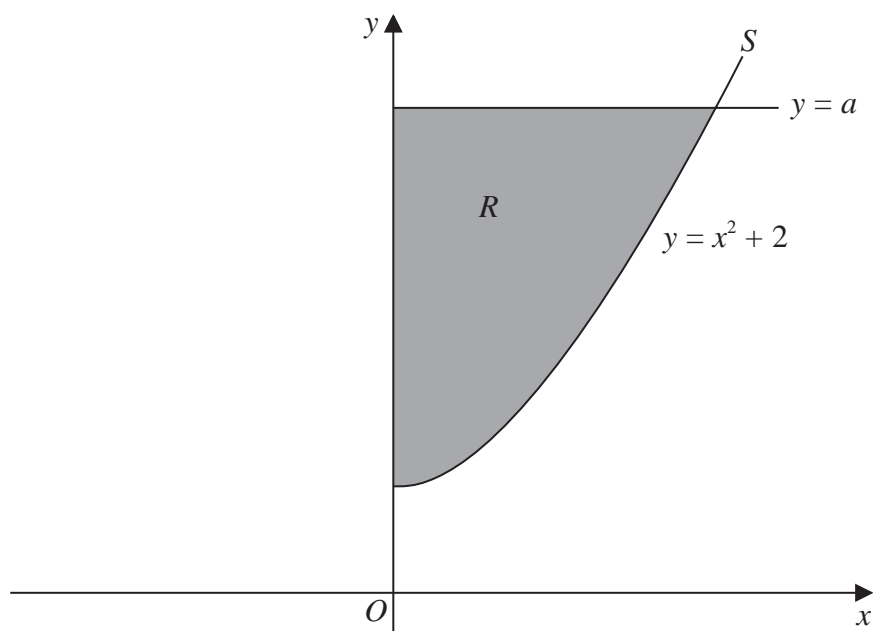
Diagram **NOT**
accurately drawn**Figure 3**

Figure 3 shows part of the curve S with equation $y = x^2 + 2$

The finite region R , shown shaded in Figure 3, is bounded by S , the y -axis and the line with equation $y = a$ where $a > 2$

The region R is rotated through 360° about the y -axis to generate a solid with volume 18π

Use algebraic integration to find the value of a

(8)

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Question 7 continued

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Area for writing answers to Question 7 continued. The area contains horizontal dotted lines for writing.



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(Total for Question 7 is 8 marks)