10 The curve C has equation $y^2 = 16x$ where $y \geqslant 0$

Given that the point A with coordinates $(a, 2a)$ where $a \neq 0$ lies on C,

(a) find the value of a.

(2)

The line l passes through A and has gradient -2

Given that l crosses the x-axis at the point B,

(b) find the x coordinate of B.

(2)

The finite region enclosed by C, l and the x-axis is rotated through $360°$ about the x-axis.

(c) Using algebraic integration, find, to 3 significant figures, the volume of the solid generated.

(5)

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Question 10 continued

P 5 3 3 9 2 R A 0 3 1 3 2

Question 10 continued

(Total for Question 10 is 9 marks)

TOTAL FOR PAPER IS 100 MARKS

P 5 3 3 9 2 R A 0 3 2 3 2