



**BLANK PAGE**

















































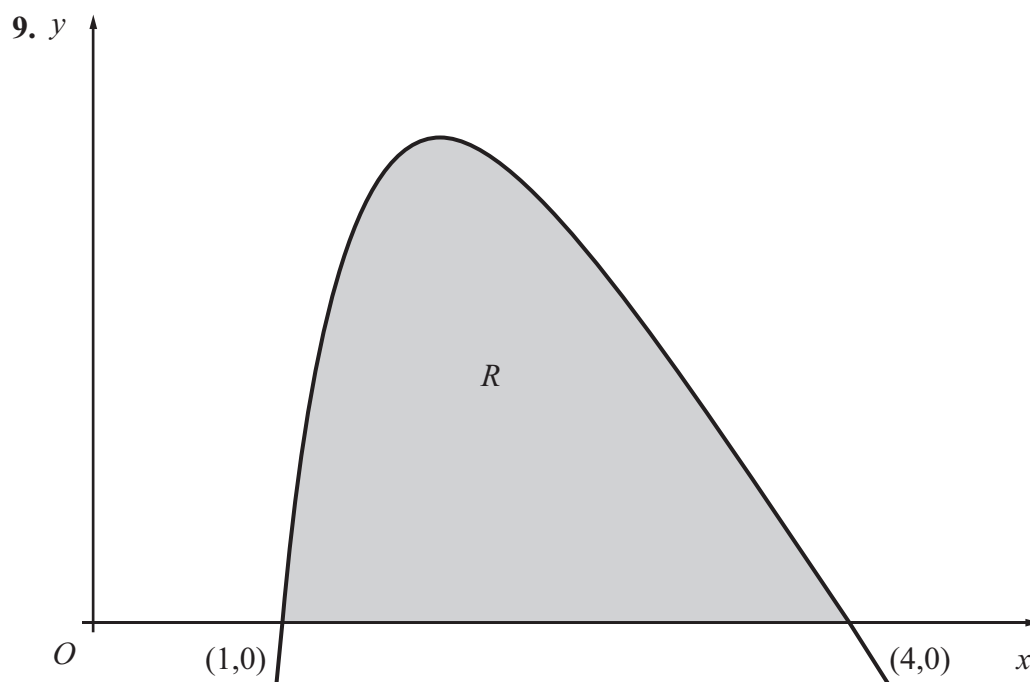












**Figure 2**

The finite region  $R$ , as shown in Figure 2, is bounded by the  $x$ -axis and the curve with equation

$$y = 27 - 2x - 9\sqrt{x} - \frac{16}{x^2}, \quad x > 0$$

The curve crosses the  $x$ -axis at the points  $(1, 0)$  and  $(4, 0)$ .

(a) Complete the table below, by giving your values of  $y$  to 3 decimal places.

$x$	1	1.5	2	2.5	3	3.5	4
$y$	0	5.866		5.210		1.856	0

**(2)**

(b) Use the trapezium rule with all the values in the completed table to find an approximate value for the area of  $R$ , giving your answer to 2 decimal places.

**(4)**

(c) Use integration to find the exact value for the area of  $R$ .

**(6)**

---



---



---



---



---









