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2.

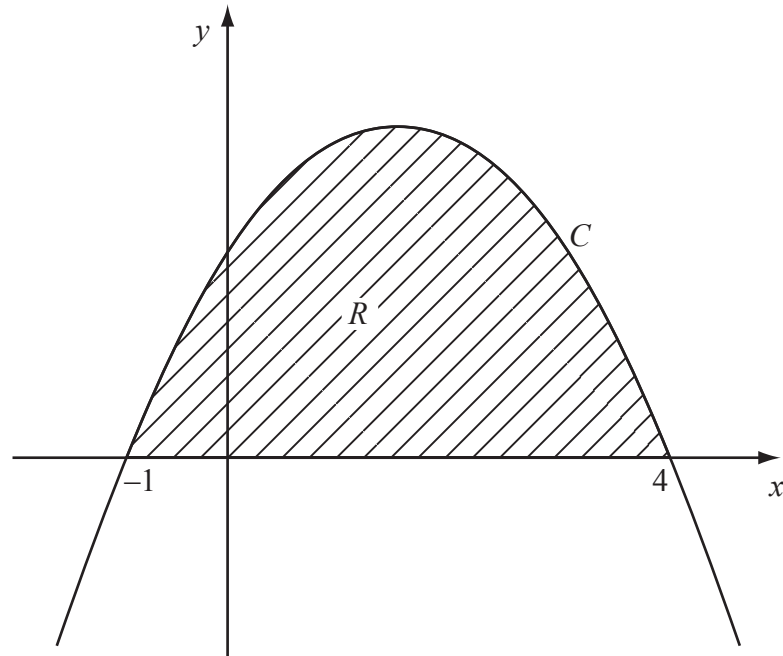


Figure 1

Figure 1 shows part of the curve C with equation $y = (1+x)(4-x)$.

The curve intersects the x -axis at $x = -1$ and $x = 4$. The region R , shown shaded in Figure 1, is bounded by C and the x -axis.

Use calculus to find the exact area of R .

(5)



3. $y = \sqrt{10x - x^2}$.

(a) Complete the table below, giving the values of y to 2 decimal places.

x	1	1.4	1.8	2.2	2.6	3
y	3	3.47			4.39	

(2)

(b) Use the trapezium rule, with all the values of y from your table, to find an approximation

for the value of $\int_1^3 \sqrt{10x - x^2} dx$.

(4)



