

8

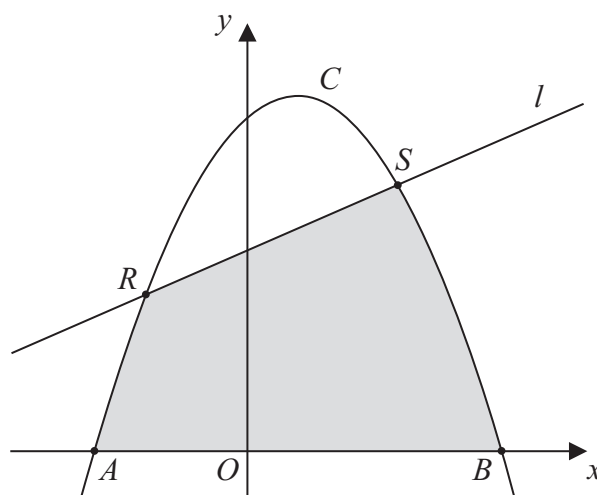
**Figure 2**

Figure 2 shows the curve C with equation $y = 15 + 2x - x^2$

The curve crosses the x -axis at the points A and B .

- (a) Find the x -coordinate of A and the x -coordinate of B . (3)

- (b) Use calculus to find the area of the finite region bounded by C and the x -axis. (4)

The line l with equation $y = x + 9$ intersects C at the points R and S .

- (c) Find the x -coordinate of R and the x -coordinate of S . (3)

- (d) Use calculus to find the area of the region bounded by C , the line l and the x -axis, shown shaded in Figure 2. (4)

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(Total for Question 8 is 14 marks)

