





















6. (a) Find

$$\int 10x(x^{\frac{1}{2}} - 2)dx$$

giving each term in its simplest form.

(4)

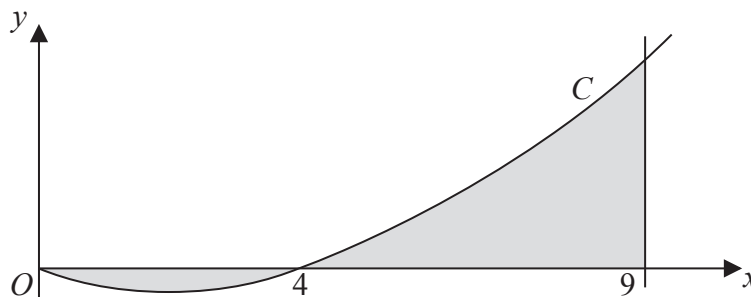


Figure 2

Figure 2 shows a sketch of part of the curve  $C$  with equation

$$y = 10x(x^{\frac{1}{2}} - 2), \quad x \geq 0$$

The curve  $C$  starts at the origin and crosses the  $x$ -axis at the point  $(4, 0)$ .

The area, shown shaded in Figure 2, consists of two finite regions and is bounded by the curve  $C$ , the  $x$ -axis and the line  $x = 9$

(b) Use your answer from part (a) to find the total area of the shaded regions.

(5)

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