3. **In this question you must show all stages of your working.**

Solutions relying entirely on calculator technology are not acceptable.
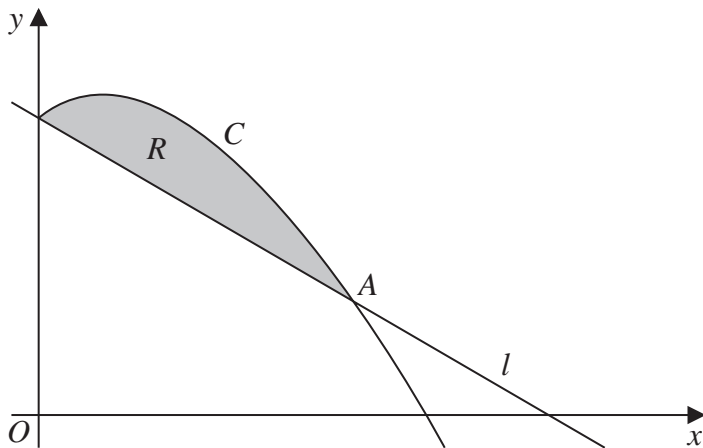

Figure 2

Figure 2 shows a sketch of part of the curve *C* with equation $y = 4x - 3x^{\frac{3}{2}} + 13$
and the line *l* with equation $y = 13 - 2x$

(a) Verify that the line and the curve intersect at the point $A\,(4, 5)$

(2)

The region *R*, shown shaded in Figure 2, is bounded by *C* and *l*

(b) Find the area of *R*

(4)