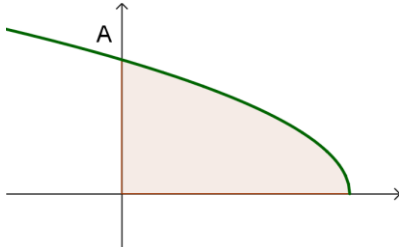


## Section 1: Finding areas

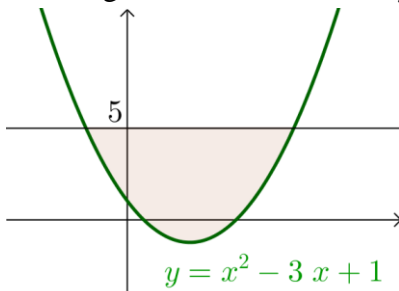
### Exercise level 1

1. The diagram shows the curve  $y = \sqrt{9 - 4x}$ .



- Write down the coordinates of point A.
- Express  $x$  in terms of  $y$ .
- Use  $\int x dy$  to find the area of the shaded region.

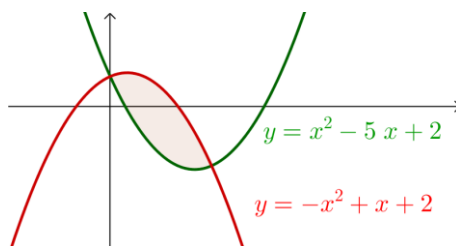
2. The diagram shows the curve  $y = x^2 - 3x + 1$  and the line  $y = 5$ .



- Find the points of intersection of the line and the curve.
- Find the area of the shaded region.

3. (i) Sketch the curve  $y = (x - 1)^2 - 4$  and the line  $y = x + 7$  on the same axes.  
 (ii) Find the points of intersection of the line and the curve.  
 (iii) Find the area enclosed between the line and the curve.

4. The diagram shows the curves  $y = x^2 - 5x + 2$  and  $y = -x^2 + x + 2$ .



- Find the points of intersection of the curves.
- Find the area of the shaded region.