ALGEBRAIC FUNCTIONS **SET 2**

1 Express each of these in the form $a(x+p)^2+q$ by completing the square.

(a) $x^2+6x-11$ *(b)* x^2-8x+3 *(c)* $7-4x-x^2$

(d) $3x^2-12x-3$ *(e)* $2x^2+6x+1$

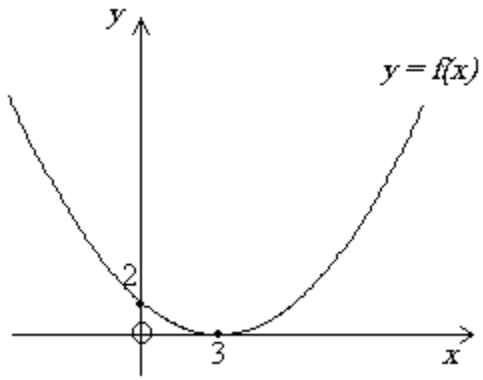
2 By completing the square, find the minimum value of $\dfrac{6}{5+2x-x^2}$, when $5+2x-x^2>0$.

3 Sketch the following graphs using the 'completing the square' method.

(a) $y=x^2-4x+7$ *(b)* $y=3-2x-x^2$

4 Below is the graph $y = f(x)$, on separate diagrams sketch the graphs of the related functions *(a)* to *(d)*.

Mark clearly the images of the points shown on the graph of $y = f(x)$ and their coordinates



(a) $y = f(x) - 1$

(b) $y = 3f(x)$

(c) $y = f(-x)$

(d) $y = f(x - 1)$

5 Sketch the graphs of:

(a) $y=4^x$ *(b)* $y=\log_{10}(x-2)$ Annotate your sketches clearly

6 Find the values of ***a*** and ***b*** for these curves.