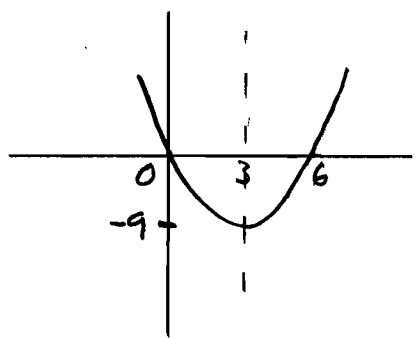


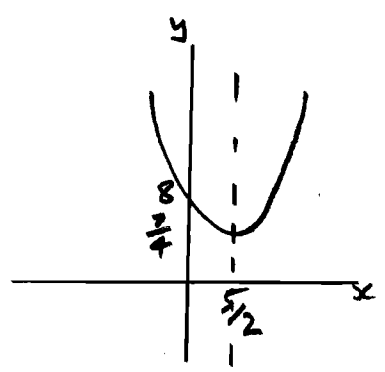
1) $x^2 - 6x = (x-3)^2 - 9$
 $y = x^2 - 6x$
 $y = x(x-6)$
 $y = 0 \Rightarrow x = 0 \text{ or } x = 6$

Line of symmetry $x = 3$
 Min point at $(3, -9)$



4) $x^2 - 5x + 8$
 $= (x - \frac{5}{2})^2 + 8 - \frac{25}{4}$
 $= (x - \frac{5}{2})^2 + \frac{32}{4} - \frac{25}{4}$
 $= (x - \frac{5}{2})^2 + \frac{7}{4}$

$\therefore x^2 - 5x + 8 \geq \frac{7}{4}$ for all x
 $\Rightarrow x^2 - 5x + 8 > 0$ for all x



Min point $(\frac{5}{2}, \frac{7}{4})$ y-intercept 8

2) i) $x^2 + 6x + 5$
 $= (x + 3)^2 + 5 - 9$
 $= (x + 3)^2 - 4$

ii) Min point at $(-3, -4)$

3) i) $x^2 - 6x + 2$
 $= (x - 3)^2 + 2 - 9$
 $= (x - 3)^2 - 7$

ii) Turning point $(3, -7)$

5) i) $x^2 - 7x + 6$
 $= (x - \frac{7}{2})^2 + 6 - \frac{49}{4}$
 $= (x - \frac{7}{2})^2 + \frac{24}{4} - \frac{49}{4}$
 $= (x - \frac{7}{2})^2 - \frac{25}{4}$

ii) Min point $(\frac{7}{2}, -\frac{25}{4})$