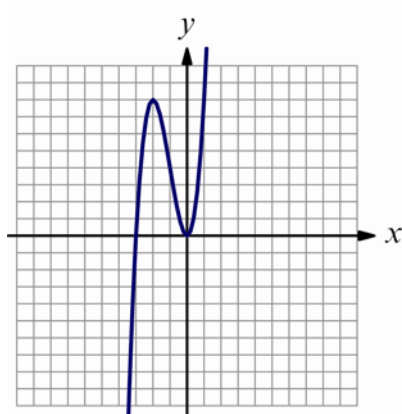
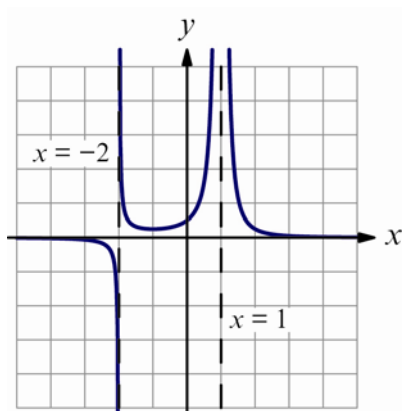


Self-assessment answers: 6 Transformations of graphs

1. (a)

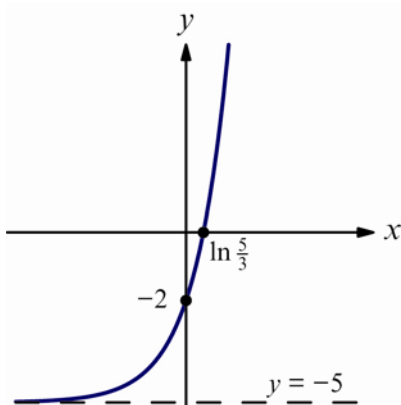


(b)



[6 marks]

2.



Horizontal asymptote $y = -5$. Intercepts at $(0, -2)$ and $(\ln \frac{5}{3}, 0)$

[5 marks]

3. Even function requires that all powers of x with non-zero coefficients in the polynomial are even.

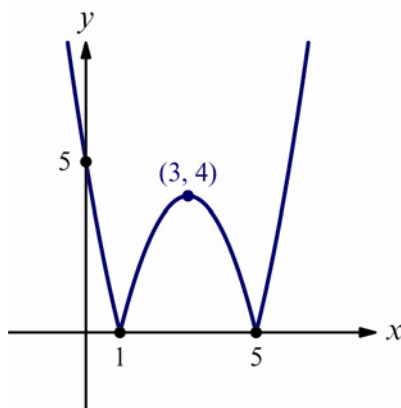
$$b = 0$$

[3 marks]

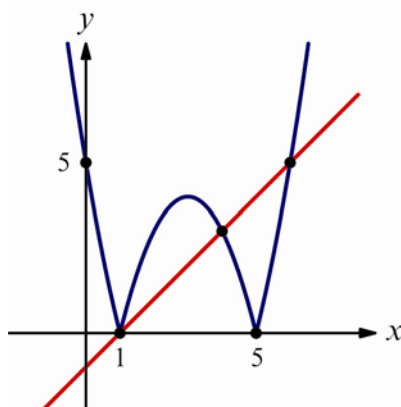
4. (a) (i) $(x-3)^2 - 4$

(ii) Translation by $\begin{pmatrix} 3 \\ 4 \end{pmatrix}$

(iii)



(b) (i)



$$(ii) |x^2 - 6x + 5| = x - 1$$

$$\Rightarrow (x^2 - 6x + 5)^2 = (x - 1)^2$$

$$\Rightarrow ((x - 1)(x - 5))^2 = (x - 1)^2$$

$$\Rightarrow (x - 1)^2(x - 5)^2 = (x - 1)^2$$

$$\Rightarrow (x - 1)^2((x - 5)^2 - 1) = 0$$

$$\Rightarrow x = 1 \text{ or } (x - 5) = \pm 1$$

$$x = 1, x = 4, x = 6$$

$$(iii) x \in] - \infty, 1[\cup] 1, 4[\cup] 6, \infty[$$

[16 marks]