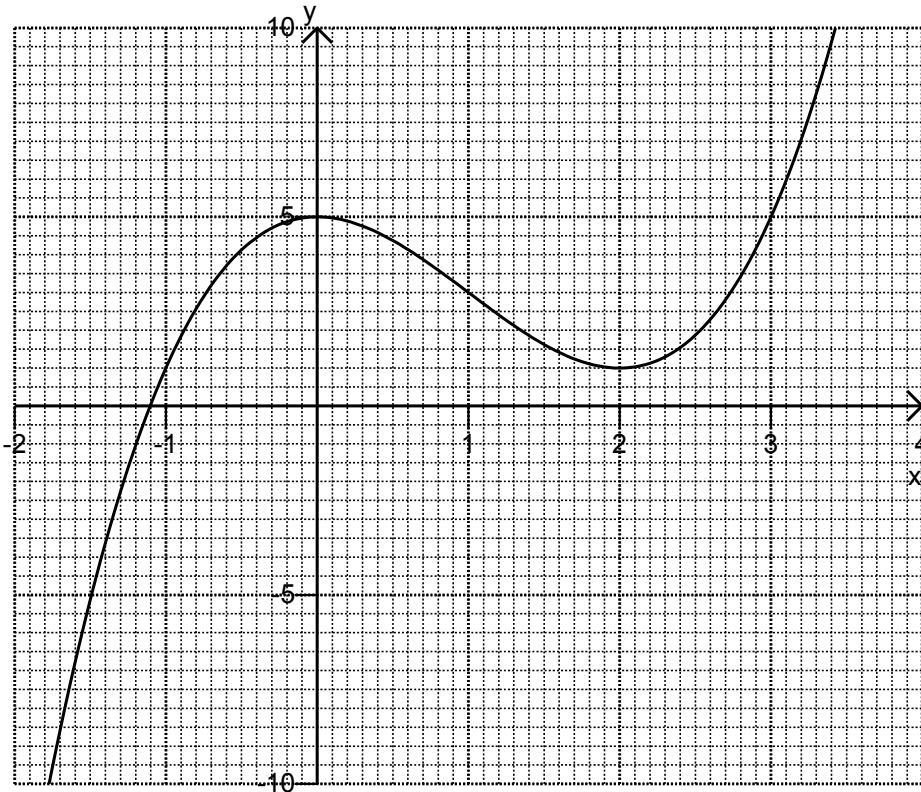
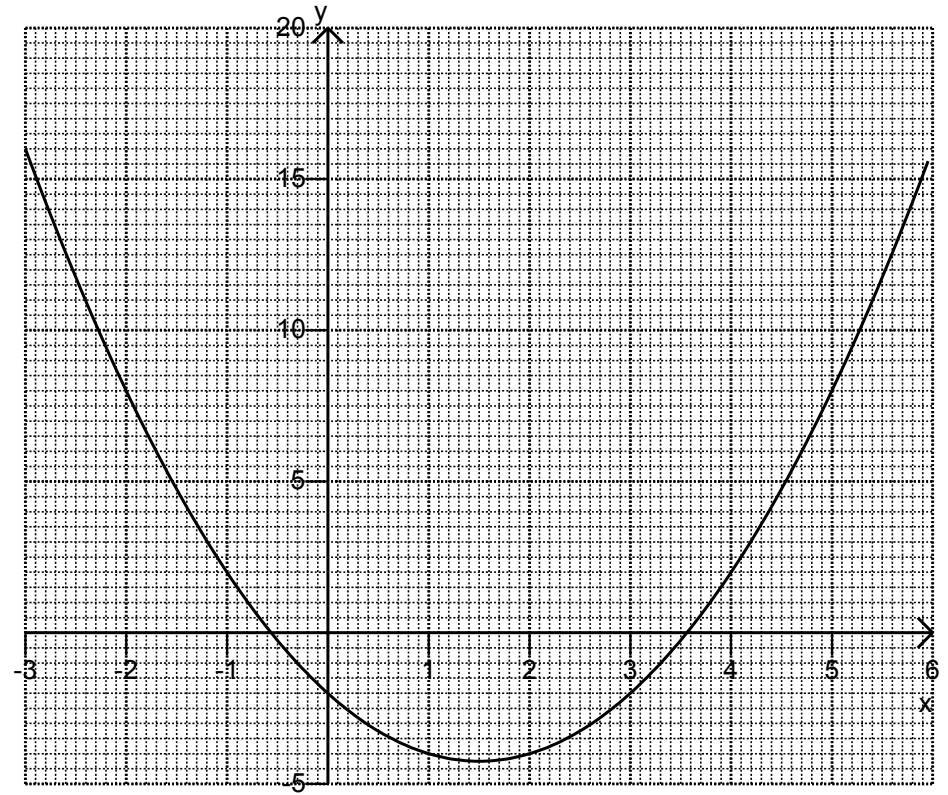


Solving Equations using graphs



1) The diagram above shows the graph of $y = x^3 - 3x^2 + 5$. By drawing suitable straight lines on this graph, find the solutions of the equations:

- (a) $x^3 - 3x^2 + 5 = 4$ (b) $x^3 - 3x^2 + 5 = x + 3$ (c) $x^3 - 3x^2 - 2 = 0$
 (d) $x^3 - 3x^2 - 2x + 6 = 0$ (e) $x^3 - 3x^2 + x + 1 = 0$



2) The diagram above shows the graph of $y = x^2 - 3x - 2$. By drawing suitable straight lines on this graph, find the solutions of the equations:

- (a) $x^2 - 3x - 2 = 7$ (b) $x^2 - 3x - 2 = 2x - 5$ (c) $x^2 - 3x + 1 = 0$
 (d) $x^2 - 4x - 4 = 0$ (e) $x^2 - 2x - 7 = 0$

3) Draw the graph of $y = x^2 - 4x - 3$ for values of x from -2 to 6 . On this graph, draw appropriate straight lines to find the solution(s) of each of the following equations (in some cases there are no solutions).

- (a) $x^2 - 4x - 3 = 2x - 5$ (b) $x^2 - 4x - 3 = -4$ (c) $x^2 - 4x - 10 = 0$
 (d) $x^2 - 4x + 6 = 0$ (e) $x^2 - 4x + 4 = 0$ (f) $x^2 - 5x + 7 = 0$

4) Assume you have already drawn the graph of $y = x^2 - 3x + 4$. You are now going to draw a straight line graph to solve an equation. State the equation of the straight line graph you need to draw if the equation is:

- (a) $x^2 - 3x + 4 = 7$ (b) $x^2 - 3x = 1$ (c) $x^2 - 3x + 4 = 2x - 1$ (d) $x^2 - 3x = 4x - 7$
 (e) $x^2 + 2x = 2$ (f) $x^2 + x = 5x + 1$ (g) $2x^2 - 6x = 8$ (h) $2x^2 - 10x = 6$
 (i) $3x - 4 - x^2 = 5$ (j) $6x - x^2 = 7$