# Solving quadratics

Section A
Rearrange these equations and solve to find x:

1. $4 = x^2 + 5x + 10$
   $x^2 + 5x + 6 = 0$
   $x = -3$ and $-2$

2. $1 = x^2 + 3x + 3$
   $x^2 + 3x + 2 = 0$
   $x = -2$ and $-1$

3. $3x - 4 = -x^2 + 9x + 3$
   $x^2 - 6x - 7 = 0$
   $x = -1$ and $7$

4. $2x + 1 = x^2 + 3x - 11$
   $x^2 + x - 12 = 0$
   $x = -4$ and $3$

5. $5x - 2 = x^2 + 11x + 6$
   $x^2 + 6x + 8 = 0$
   $x = -4$ and $-2$

6. $2 = x^2 + 6x + 11$
   $x^2 + 6x + 9 = 0$
   $x = -3$

Section B
We want to solve the equation $x + 9 = x^2 + 7x + 2$
How can we get this into the form $x^2 + 6x - 7$? take $(x + 9)$ from both sides
Use the graph $y = x^2 + 6x - 7$ to solve $x + 9 = x^2 + 7x + 2$.
$x = -7$ and $1$

Use the graph $y = x^2 + 15x + 54$ to solve the equation
$-6x + 10 = x^2 + 9x + 64$
$x = -9$ and $-6$

Use the graph $y = x^2 - 12x + 32$ to solve the equation
$x^2 + x + 32 = 13x$
$x = 4$ and $8$

Use the graph $x = y^2 + 3y - 4$ to solve the equation
$-2y - 3 = y^2 + y - 7$
$y = -4$ and $1$