QUADRATIC EQUATIONS

An equation of the form $ax^2 + bx + c = 0$, $a \neq 0$ is called a quadratic equation in x. The values of x that make this equation true are called the solutions or the roots of the equation.

A quadratic equation can be solved by factorising the quadratic expression and making the factored expression equal to zero:

If $AB = 0$, then $A = 0$ or $B = 0$ or $A = B = 0$. (This is the **null factor law**.)

Example 7

Solve:

(a) $x(x-2) = 0$ **(b)** $(x+1)(x-4) = 0$

Solution

(a) $x(x-2) = 0$

$x = 0$ or $x - 2 = 0$

$x = 0$ or $x = 2$

(b) $(x+1)(x-4) = 0$

$x + 1 = 0$ or $x - 4 = 0$

$x = -1$ or $x = 4$