Solving Quadratic Equations by Factoring

If a quadratic expression can be factored, then it is quite simple to solve by using the factors and the fact that if a*b = 0 then either a = 0 or b = 0.

Examples:

$x^2 – 5x + 6 = 0$
$(x – 2)(x-3) = 0$
$x – 2 = 0$ or $x – 3 = 0$
$x = 2$ or $x = 3$
two solutions

x2 –2x + 1 = 0
$(x – 1)(x – 1) = 0$
$x – 1= 0$ or $x -1 = 0$
$x = 1$ or $x = 1$
one solution

$x^2 = 36$
$x^2 – 36 = 0$
$(x – 6)(x + 6) = 0$
$x – 6 = 0$ or $x + 6 = 0$
$x = 6$ or $x = -6$
two solutions

$6x^2 + 5x = 4$
$6x^2 + 5x – 4 = 0$
$(2x –1)(3x + 4) = 0$
$2x –1 = 0$ or $3x + 4 = 0$
$2x = 1$ or $3x = -4$
$x = ½$ or $x =-3/4$