

## Test your ability to solve quadratics

*Solve the following mathematics problems for  $x$  by using the quadratic formula, completing the square or using factorization techniques. You should document your knowledge and understanding in the conceptual page for these three methods and explain in detail how each one works and what to do.*

### CONCEPTUAL UNDERSTANDING

Solve quadratics by completing the square

### PURE MATHEMATICAL UNDERSTANDING

$$x^2 + 3x - 9 = 0$$

$$x^2 + 2x + 2 = 0$$

Solve quadratics by using the quadratic formula

$$x^2 + x = 3$$

$$x^2 - 5x + 5 = 0$$

$$x(x + 6) + 13 = 0$$

Solve quadratics by factorization

$$x^2 + 1 = 0$$