

## (6) Solving Quadratic Equations

### WORKING AT D/E

(1) How many solutions are there to the equation  $x^2 = 1$ ?

(2) Solve the quadratic equation  $8x^2 + 2x - 3 = 0$  by factorisation. Think double brackets.

(3) Solve the equation  $x^2 - 4x - 8 = 0$  in the form  $x = p \pm q\sqrt{r}$ . You know this won't factor so you have two other choices.

### WORKING AT B/C

(1) Without expanding the brackets, find the solutions to the equation  $(4x - 1)^2 = 25$

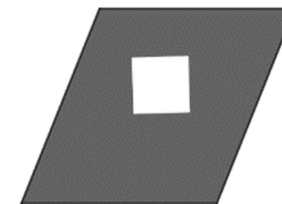
(2) Solve the equation  $x - 4 - \frac{12}{x} = 0$  by first forming a quadratic equation.

(3) Solve the quadratic equation  $4.9t^2 - t = 36$  giving each answer to 3SF

### WORKING AT A\*/A

(1) Find the only real solution to the equation:  
 $\sqrt{x} - \frac{3}{\sqrt{x}} = 2, x > 0$

(2) The diagram below shows a parallelogram with a square removed. The base of the parallelogram is  $(x + 6)cm$  and the perpendicular height is  $(13 - x)cm$ . The side length of the square is  $(x + 1)cm$ . Given that the area of shaded part of the shape is  $74cm^2$ , find the least area of the white square.



(3) Show that the equation  $4x = (8x - 1)^{\frac{1}{2}}, x > \frac{1}{8}$  has one solution.