Quadratic Equations 2 www.m4ths.com Name_____

$ax^2 = b$	$ax^2 + bx = 0$	$ax^2 + bx + c = 0$
Square root both sides when in the form $x^2 = \frac{b}{a}$. Remember the $\pm$	Factor into single set of brackets and set one side to zero.	Will it factor? If so, double brackets and set to zero. If not, use the quadratic equation and remember both roots.

(1) Solve $1-2x^2 = -49$ giving your two answers as integers.

(2) Solve $x^2 - 2x - 15 = 0$.

(3) Find the solutions to $-3x^2 + x = -5$ giving each answer to one decimal place.

(4) Solve the equation $5x^2 + 9x + 2 = 0$. Give your answers as exact fractions.

(5) Solve the quadratic equation $6 - x^2 + x = 0$.

(6) Find the roots of the equation $9x^2 - 3x - 1 = 0$

(7) Show that the solutions of the equation $tx^2 = -ux$ are $x = 0$ and $x = \frac{-u}{t}$ by factoring and solving the equation.

(8) Find the roots of the equation $x^2 + 4x + 2 = 0$ giving your answers as surds.

(9) Solve the equation $9 - 5x^2 = -7$ giving your answers in the form $\pm\sqrt{p}$.

(10) Solve the equation $\frac{1}{3}x^2 = x + 5$

(11) A rectangle has side lengths $(4x-1)$ and $(5-x)$. The area of the rectangle is 21square units. Set up and solve an equation to find the perimeter of the rectangle.

(12) A right-angled triangle has hypotenuse of length $(x+11)$ and two shorter sides $(7x-2)$ and $(x+3)$. Set up and solve an equation to find the length of each side. No marks will be given for trial and error or guessing.

(13) Find one quadratic equation that has one real solutions.