Homework

(1) Solve the diophantine equation $x^2 + 2y^2 = z^2$
   (a) à la Diophantus
   (b) using modern notation
   (c) using the geometric technique of sweeping lines.

(2) Solve the system of equations $x + a = u^2$, $x + b = v^2$, where a and b are given rational numbers.
   Hint: subtract the two equations, find all rational points on this curve, and then determine x.

(3) List all the element of the symmetry group of a square. Construct a multiplication table for this group. List all possible subgroups.