Name: _____ **Student Number:** _____

1. Find the minimum of $Q = x^2 + y^2$ if $x + y = 6$.

   (a) (1 point) Write down the objective function.

   (b) (1 point) Write down the constraint.

   (c) (1 point) Use the constraint to rewrite/simplify the objective function.

   (d) (2 points) Use the second derivative test to find the minimum value of Q as well as the coordinates (x, y) where the minimum occurs.