

**MATH 243: SECTION 14.8 GROUPWORK**

- (1) Use the method of Lagrange multipliers to find the extreme values of the function  $f(x, y) = x^2 - y^2$  subject to the constraint  $x^2 + y^2 = 4$ .
- (2) Find the minimum value of  $f(x, y) = x^2 + y^2$  subject to the constraint  $xy = 1$ , but show that there is no maximum value.