# Math 2513 – Summer 2024

## Assignment 2

Due: June 5, 2024 – 11:59PM

Q1 – Approximate the value of 0.94/5.013 without using a computer or calculator.

Q2 – Find an approximate value for sin(91.1◦) without using a computer or calculator.

Q3 – Find the gradient of the function f(x,y) = exysin(x+y)

Q4 – Find the directional derivative of the function f(x,y,z) = sin(xy)cos(z) in the z direction at the point (1,1,0).

Q5 – Find all of the maxima and minima for the curve f(x,y), x3y = 3.

Q6 – Use the method of Lagrange Multipliers to find the maximum and minimum values of f(x,y)=xy subject to the constraint x+2y2=1.

Q7 – Use the Second Derivative test to find all of the values of the constant c for which the function z = x2 + cxy = y2 has a saddle point at (0,0).