# 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 – Given the function f(x,y,z) = 2x3 + 5yz, find the first derivatives with respect to r, θ, φ, using spherical coordinates.

Q5 – Find the third order Taylor polynomial for the function f(x,y) = 5x2 + ey about the point (0,0).

Q6 – Find the directional derivative for f(x,y) = 3x2 – 12y, at the point (4, 5) in the direction of the vector [-1,-1].