# Math 2513 – Summer 2024

## Assignment 3

Due: June 26, 2024 – 11:59PM

Q1 (3) – Let . Evaluate



Q2 (3) – Convert the following vectors to polar coordinates

1. [1,1]
2. [3,-4]
3. [-2,0]

Q3 (3) – Convert the following to Cartesian coordinates

1. [4, 0]
2. [2, π]
3. [1.3, π/2]

Q4 (3) – Using a double integral, find the total mass for a bar that has a density function given by f(x,y) = xy. The bar is 3 units wide and 12 units long.

Q5 (3) – Use the method of Lagrange Multipliers to find the maximum and minimum values of

f(x,y) = xy

subject to the constraint

x2+2y2=1