MATH 224B **NAME:**
Instructor: Junaid Hasan **Roll No:**

Quiz 1
30 minutes

You can use both sides of the page. Please indicate question number and box your final answer. When using multiple sheets of paper, please indicate your name on each sheet.

Question 1 [Integrals]

a) Change the order of integration of the following: (5 points each)

$$\int_{-1}^{1}\int_{0}^{\sqrt{1-x^2}} f(x,y)\,dy\,dx.$$

b) Compute the following integral by changing to polar coordinates:

$$\int_{0}^{a}\int_{0}^{\sqrt{a^2-y^2}} (x^2+y^2)\,dx\,dy.$$

Question 2 [Volumes]

Compute the volume of solid bound by $z = x^2 + y^2, \quad z = 0, \quad x^2 + y^2 = 2x.$ (10 points)