Math 324F
Fall 2015
Due on 7th October 2015 in class

Problem 15.3.21 (**5 points**)

Compute $\iint_D (2x - y)\, dA$, where D is bounded by the circle with center at origin and radius 2

Problem 15.3.27 (**5 points**)

Find the volume of the solid bounded by the coordinate planes and the plane $3x + 2y + z = 6$.

Problem 15.3.47 (**5 points**)

Sketch the region of integration and change the order of integration.
$\int_1^2 \int_0^{\log x} f(x, y)\, dydx$

Problem 15.4.11 (**5points**)

Evaluate the integral by changing to polar coordinates.
$\iint_D e^{-x^2-y^2}\, dA$, where D is the region bounded by the semicircle $x = \sqrt{4 - y^2}$ and the y-axis.

Problem 15.4.39 (**10 points**)

Use polar co-ordinates to combine the sum
$\int_{1/\sqrt{2}}^1 \int_{\sqrt{1-x^2}}^x xy\, dydx + \int_1^{\sqrt{2}} \int_0^x xy\, dydx + \int_{\sqrt{2}}^2 \int_0^{\sqrt{4-x^2}} xy\, dydx$
into one double integral. Then evaluate the double integral.