

QUIZ 9

(30MINS, 40PTS)

Please write down your name, SID, and solutions discernably.

Name :

SID :

Score :

1. (10pts) Evaluate the double integral,

$$\iint_D (2xy) dA$$

where D is the triangular region with vertices $(0,0)$, $(1,2)$, and $(0,3)$.

2. (10pts) Sketch the region of integration and change the order of integration.

$$\int_0^1 \int_{3y}^3 f(x,y) dx dy$$

3. (10pts) Evaluate the given integral by changing to polar coordinates,

$$\iint_R \frac{y^2}{x^2 + y^2} dA$$

where R is the region that lies between the circles $x^2 + y^2 = a^2$ and $x^2 + y^2 = b^2$ with $0 < a < b$.

4. (10pts) Evaluate $\iiint_H (9 - x^2 - y^2) dV$, where H is the solid hemisphere $x^2 + y^2 + z^2 \leq 9$, $z \geq 0$.