

Name _____ Date _____

Instructions: Please show all of your work as partial credit will be given where appropriate, **and** there may be no credit given for problems where there is no work shown. All answers should be completely simplified, unless otherwise stated.

1. (10 points) Evaluate $\iint_S \sqrt{4-x^2-y^2} dA$ using polar coordinates, where S is the first quadrant sector of the circle $x^2+y^2=4$ between $y=0$ and $y=x$.

Answer : _____

2. (10 points) Find the area of the surface $z=\sqrt{9-y^2}$ that is directly above the square with vertices (1,0), (3,0), (3,2) and (1,2).

Answer: _____

3. (10 points) $\iint_S (x+y) dA$ where S is the region between $y=x^2$ and $y=\sqrt{x}$.

Answer: _____

4. (10 points) Rewrite $\int_0^2 \int_{y^2}^{2y} f(x,y) dx dy$ as an iterated integral with the order of integration switched.

Answer: _____