

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. (20 points) Calculate the surface area of the part of the surface  $z = \sqrt{4 - y^2}$  in the first octant that is directly above the circle  $x^2 + y^2 = 4$  in the xy-plane.

Answer: \_\_\_\_\_

2. (10 points) Evaluate the iterated integral  $\int_0^z \int_0^{\sqrt{x/z}} \int_0^z 2xyz \, dydx dz$  .

Answer: \_\_\_\_\_

3. (10 points) Calculate  $\iint_S e^{x^2+y^2} \, dA$  , where  $S$  is the region enclosed by  $x^2+y^2=4$  .

Answer : \_\_\_\_\_