

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) Find the area of the plane $3x + 2y + 6z = 12$ that is above the rectangle in the xy -plane with vertices $(0,0)$, $(2,0)$, $(2,1)$, and $(0,1)$.

Answer: _____

2. (15 points) Evaluate the iterated integral $\int_0^2 \int_1^z \int_0^{\sqrt{x/z}} 2xyz \, dy \, dx \, dz$.

Answer: _____

3. (15 points) Find the area 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. (Hint : $\int \frac{1}{1 + \cos x} = \tan \frac{x}{2}$.)

Answer : _____