

1. (10 points) Using a double integral find the volume of the tetrahedron bounded by the coordinate planes and the plane $4x + 3y + 2z = 12$.

2. (10 points) Find the volume of the region bounded below by the xy-plane, bounded inside by the cylinder $x^2 + y^2 = 1$ and bounded above by $z = 4 - x^2 - y^2$.