

1. PREPQUIZ 4B

Problem 1: Find the area of the region in the first quadrant of the xy plane given by $1 \leq x^2 + 2y^2 \leq 2$ and $1 \leq x/y \leq 2$.

Problem 2: Find the volume of the region bounded below by the xy plane, bounded above by the surface $z = 3\sqrt{1 - x^2 - y^2}$ and laterally by the cylinder $r = \cos \theta$.

Problem 3: Find the center of mass of a body with constant mass density δ bounded below by the plane $z = 1$ and above by the surface $z = 4 - x^2 - y^2$.