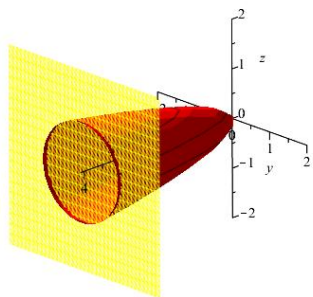


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Show all work. 5 points each.

1. **SET UP** the integral  $\iiint_S x \, dV$  where  $E$  is bounded by the paraboloid  $x = 4y^2 + 4x^2$  and the plane  $x = 4$ .



2. Find the Jacobian of the transformation  $x = u^2 - v^2$ ,  $y = 2uv$ .