1) Use polar coordinates to find the area enclosed by $r = \cos 3\theta$.

2) Set up a triple integral using $dx\, dy\, dz$ as order of integration to find volume of the solid bounded by the graph of equations $y = 2 - z^2, y = z^2, x + z = 5,$ and $x = 0$.

1) Use polar coordinates to evaluate $\int_{-1}^{1} \int_{0}^{\sqrt{1-x^2}} (x^2 + y^2)^{3/2} \, dy \, dx$

2) Set up a triple integral using $dz \, dy \, dx$ as order of integration to find volume of the solid bounded by the surface $y = x^2$ and planes $y + z = 9$ and $z = 0$.