Fubini's Theorem- HW Problems

1. Evaulate $\iiint_W (x^2 + y^2 + z^2)dxdydz$, where W is the solid cylinder given by $x^2 + y^2 \leq 2, \quad -2 \leq z \leq 3$, by changing to cylindrical coordinates:
   $x = rcos\theta, \quad y = rsin\theta, \quad z = z.$
   Show how you calculated the jacobian.

2. Evaluate $\iiint_W \frac{dxdydz}{(x^2+y^2+z^2)^{\frac{3}{2}}}$, where W is the solid bounded by $x^2 + y^2 + z^2 = a^2$ and $x^2 + y^2 + z^2 = b^2, \ 0 < b < a.$
   change to spherical coordinates:
   $x = \rho cos\theta sin\varphi, \quad y = \rho sin\theta sin\varphi, \quad z = \rho cos\varphi$.
   Show how you calculated the jacobian.