1. For the region $W$ below write but do not evaluate the triple integral for $\iiint_W f \, dV$ in the following coordinate systems (a) Cartesian (b) Cylindrical (c) Spherical.

2. Find $\int_C \mathbf{F} \cdot d\mathbf{r}$ for the given $\mathbf{F} = \langle x^3, y^2, z \rangle$ and $C$ is the line from the origin to the point $(2, 3, 4)$. 