

The solid sphere itself is represented by $\sqrt{x^2 + y^2 + z^2} \leq 7$. Since we want only the upper hemisphere, we restrict the z -coordinate to nonnegative values. Then inequalities describing the region are $\sqrt{x^2 + y^2 + z^2} \leq 7, z \geq 0$, or $x^2 + y^2 + z^2 \leq 49, z \geq 0$.