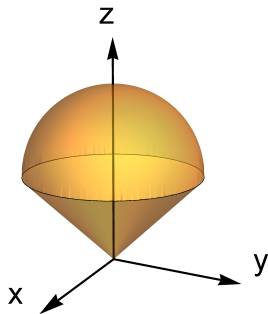




Cylindrical Coordinates



Question

The region depicted is above the standard cone and below the unit sphere centered at $(0, 0, 1)$. Select the correct description in cylindrical coordinates.

$$A. \begin{cases} r \leq z \leq \sqrt{1-r^2} + 1 \\ 0 \leq r \leq 1 \\ 0 \leq \theta \leq 2\pi \end{cases}$$

$$B. \begin{cases} r \leq z \leq \sqrt{1-r^2} \\ 0 \leq r \leq 1 \\ 0 \leq \theta \leq 2\pi \end{cases}$$

$$C. \begin{cases} r \leq z \leq \sqrt{4-z^2} \\ 0 \leq r \leq 1 \\ 0 \leq \theta \leq 2\pi \end{cases}$$