

**Problem 3.21** Convert the coordinates of the following points from spherical to cylindrical coordinates:

(b)  $P_2(5, 0, \pi)$ ,

**Solution:**

(b)  $P_2(r, \phi, z) = P_2(5 \sin 0, \pi, 5 \cos 0) = P_2(0, \pi, 5)$ .