

Name:.....Serial#:.....Sec #:.....

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**Q.1:** Describe the traces of the quadratic surface  $4x^2 + 25y^2 + z^2 = 100$  in the planes  $x = k$ ,  $y = k$ , and  $z = k$ . Write the interval for each  $k$ .

**Q.2:** Change the spherical coordinates  $\left(8, \frac{\pi}{3}, \frac{\pi}{4}\right)$  to cylindrical coordinates.

**Q.2:** Identify the surface given by  $\rho^2 (4 \sin^2(\phi) + 9 \cos^2(\phi)) = 36$ .