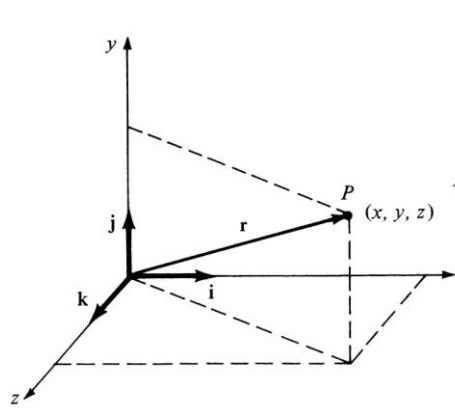


(KEY CONCEPT) [B-1-1]

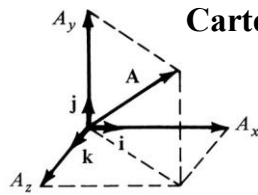


Vector in Cartesian Space:

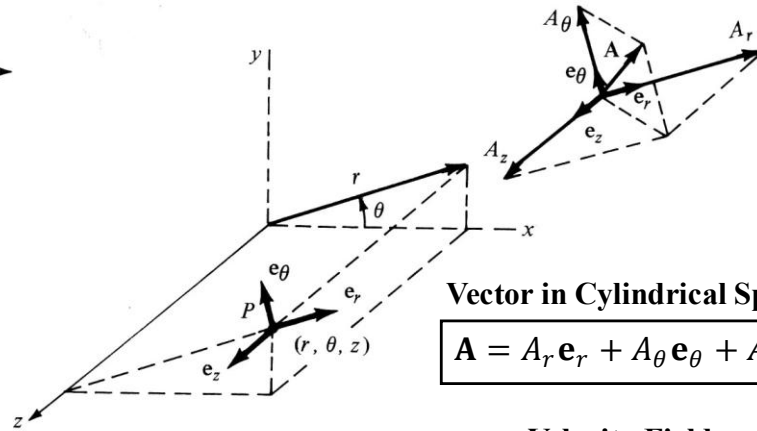
$$\mathbf{A} = A_x \mathbf{i} + A_y \mathbf{j} + A_z \mathbf{k}$$

Velocity Field:

$$\mathbf{V} = u \mathbf{i} + v \mathbf{j} + w \mathbf{k}$$



Cartesian Coordinate System



Cylindrical Coordinate System

Vector in Cylindrical Space:

$$\mathbf{A} = A_r \mathbf{e}_r + A_\theta \mathbf{e}_\theta + A_z \mathbf{e}_z$$

Velocity Field:

$$\mathbf{V} = V_r \mathbf{e}_r + V_\theta \mathbf{e}_\theta + V_z \mathbf{e}_z$$

Lined area for notes, consisting of multiple horizontal dashed lines.