## Special Problem 2-5.10

Evaluate the integral:

$$
\int_{C} \boldsymbol{G}(\bar{r}) \cdot \overline{d \ell}
$$

where $G(\bar{r})$ is some arbitrary vector field equal to:

$$
G(\bar{r})=\pi r \sin \phi \hat{a}_{r}+2 \hat{a}_{\theta}+r^{2} \hat{a}_{\phi}
$$

and contour $C$ lies on the $y-z$ plane as shown below:


