## Special Problem 2-5.10

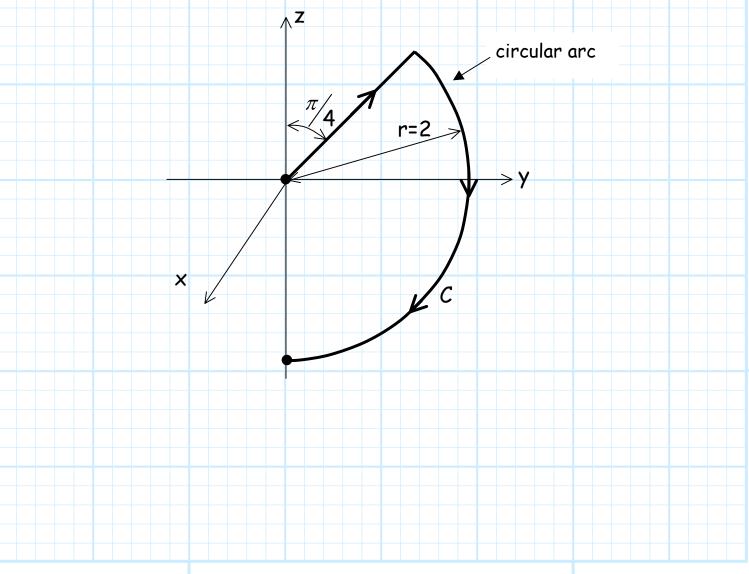
Evaluate the integral:

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

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

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

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



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