

Recorder: _____

Task Master: _____ Cynic: _____ Other: _____

VECTOR LINE INTEGRALS

Working in small groups (3 or 4 people), solve as many of the problems below as possible. Try to resolve questions within the group before asking for help. Show your work! Full credit will only be given if your answer is supported by calculations and/or explanations as appropriate.

1. Choose two points on your vector field map that are not close together. Choose any path connecting these two points.
 - (a) Determine the sign of $\int_C \vec{F} \cdot d\vec{r}$ along your path.
 - (b) Compute the integral.
You may need to adjust the choice of points and/or path to yield an integral that you are able to compute exactly.
2. Choose a different path between the same two points, and answer the same two questions using the new path. Did you get the same answers?
3. Find a path that maximizes or minimizes the value of the integral.