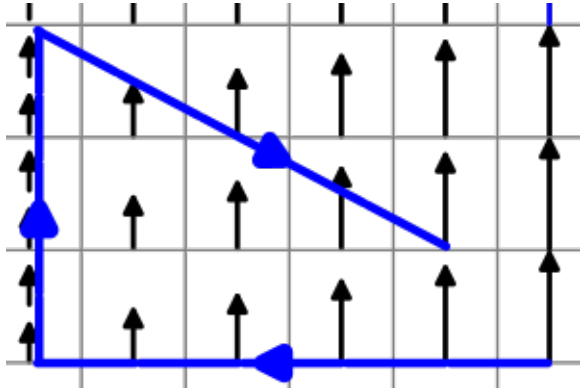


Name: _____

Work by an Electric Field

Working in small groups (2 or 3 people), solve as many of the problems below as possible. Try to resolve questions within the group before asking for help. Each group member should then write up solutions in their own words.



Estimate Vector Line Integral: For each segment of the path on the vector field \vec{F} shown, estimate the value of the integral:

$$\int_{\text{path}} \vec{F} \cdot d\vec{r}$$

where the side of each square is 1 cm and the length of the longest arrow is 10 units of \vec{F} .

Estimate Work on A Path: The attached vector field represents an electric field. Draw a path starting at the green star and ending at the yellow triangle. Estimate the work done on a test charge by the field along the path you drew. The longest vector shown on the vector field has a magnitude of 15 electric field units.

Relate Representations: How is the work done by the electric field related to the surface?

Activity Evaluation

What was the main point of this activity?

Describe one thing you understand as a result of this activity.

Describe one thing that is confusing after completing this activity.