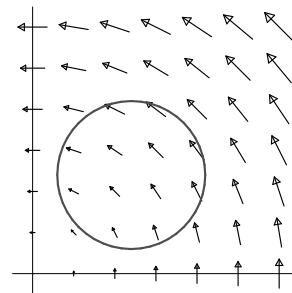
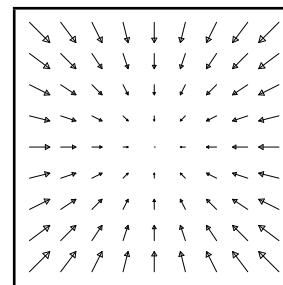
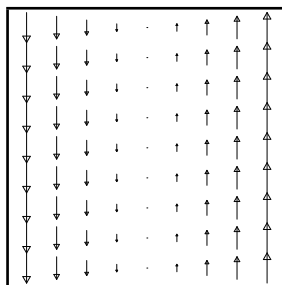
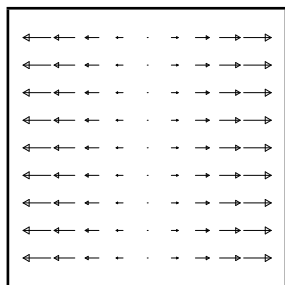
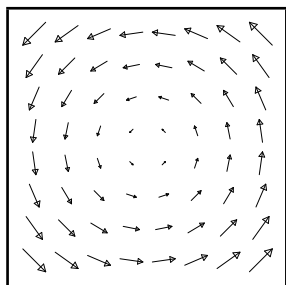


1. Consider the vector field \vec{F} shown at the right, and the loop C , which is to be traversed in the *counterclockwise* direction. Is $\oint_C \vec{F} \cdot d\vec{r}$ positive, negative, or zero?



- 2.
- (a) For each vector field \vec{F} shown below, sketch a curve for which the integral $\int_C \vec{F} \cdot d\vec{r}$ is positive.
- (b) For which of these vector fields is it possible to choose your curve to be closed?



EXTRA CREDIT:

From your answer to Problem 1, can you determine whether or not $\vec{F} = \vec{\nabla}f$ for some function f ?