

## WORK

Determine the work,  $\int_C \vec{F} \cdot d\vec{r}$ , done by each vector field below along the indicated path.

1.  $\vec{F} = x\hat{i} + y\hat{j}$  and  $C$  is the line segment from  $(1,2)$  to  $(5,10)$ .
2.  $\vec{F} = x\hat{i} + y\hat{j}$  and  $C$  is the line segment from  $(5,10)$  to  $(1,2)$ .
3.  $\vec{F} = -x\hat{i} - y\hat{j}$  and  $C$  is the line segment from  $(1,2)$  to  $(5,10)$ .
4.  $\vec{F} = x\hat{i} + y\hat{j}$  and  $C$  is the unit circle oriented counterclockwise.
5.  $\vec{F} = -y\hat{i} + x\hat{j}$  and  $C$  is the unit circle oriented counterclockwise.
6.  $\vec{F} = -y\hat{i} + x\hat{j}$  and  $C$  is the unit circle oriented clockwise.
7.  $\vec{F} = y\hat{i} - x\hat{j}$  and  $C$  is the unit circle oriented counterclockwise.