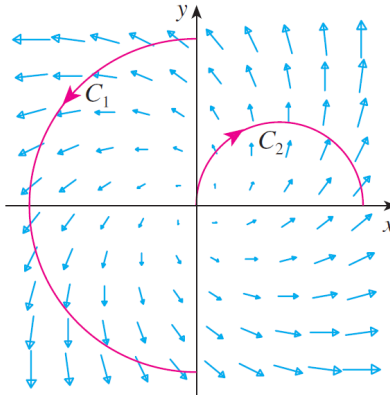


Exercise 18

The figure shows a vector field \mathbf{F} and two curves C_1 and C_2 . Are the line integrals of \mathbf{F} over C_1 and C_2 positive, negative, or zero? Explain.



Solution

Because the path C_1 moves roughly in the direction that the vectors are pointing, the integral of \mathbf{F} over C_1 is positive.

Because the vectors point perpendicular to the path C_2 , the integral of \mathbf{F} over C_2 is zero.