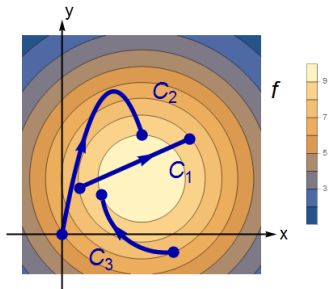


# The Fundamental Theorem



## Question

The contour map of a function  $f(x, y)$  is shown, along with oriented curves  $C_1$ ,  $C_2$ , and  $C_3$ . If  $\vec{F} = \nabla f$ , rank the integrals  $I_j = \int_{C_j} \vec{F} \cdot d\vec{r}$ .

- A.  $I_3 < I_1 < I_2$
- B.  $I_1 < I_3 < I_2$
- C.  $I_1 < I_2 = I_3$
- D.  $I_2 = I_3 < I_1$