The curve of intersection is an ellipse in the plane $z = 1 - x$.
$\operatorname{curl} \mathbf{F} = 2\mathbf{i} - x\,\mathbf{k}$ and we take the surface S to be the planar region enclosed by C with upward orientation, so

$$\begin{aligned}
\oint_C \mathbf{F} \cdot d\mathbf{r} &= \iint_S \operatorname{curl} \mathbf{F} \cdot d\mathbf{S} = \iint_{x^2+y^2 \le 9} [-2\,(-1) - 0 + (-x)]\, dA \\
&= \int_0^{2\pi} \int_0^3 (2 - r\cos\theta)\; r\, dr\, d\theta = \int_0^{2\pi} \int_0^3 (2r - r^2 \cos\theta)\, dr\, d\theta \\
&= \int_0^{2\pi} \left(\tfrac{18}{2} - 9\cos\theta\right) d\theta = [9\theta - 9\sin\theta]_0^{2\pi} = 18\pi
\end{aligned}$$