$\mathbf{F}(x, y) = e^{-y}\,\mathbf{i} - xe^{-y}\,\mathbf{j}$, $W = \int_C \mathbf{F} \cdot d\mathbf{r}$.

Since $\dfrac{\partial}{\partial y}(e^{-y}) = -e^{-y} = \dfrac{\partial}{\partial x}(-xe^{-y})$, there exists a function f such that $\nabla f = \mathbf{F}$. In fact, $f_x = e^{-y} \quad\Rightarrow\quad f(x, y) = xe^{-y} + g(y) \quad\Rightarrow\quad f_y = -xe^{-y} + g'(y) \quad\Rightarrow\quad g'(y) = 0$, so we can take $f(x, y) = xe^{-y}$ as a potential function for $\mathbf{F}$.

Thus $W = \int_C \mathbf{F} \cdot d\mathbf{r} = f(4, 0) - f(0, 2) = 4 - 0 = 4$.