Worksheet Feb 12

Let $\mathbf{F}(x, y) = \langle y\cos(x) + e^x, \sin(x) + y + 2\rangle$.

1. Check that "$\frac{\partial Q}{\partial x} = \frac{\partial P}{\partial y}$".

2. Find (if it exists) a function f such that $\mathbf{F} = \nabla f$.

3. Use (2) to evaluate $\int_C \mathbf{F} \cdot d\mathbf{r}$ where C is a path from $(0, 1)$ to $(\frac{\pi}{2}, 2)$.