Questions

1. Let ϕ be the vector field $\phi(x, y, z) = -2$ and C the curve given by $\mathbf{r}(t) = 2\hat{\mathbf{i}} + t\hat{\mathbf{j}} - 3\hat{\mathbf{k}}$ for $1 \leq t \leq 2$. Calculate $\int_C \phi \cdot \mathbf{dr}$.