Math 3298 Worksheet 28

Group members (2 to 4): _____

(1) For the following vector fields, determine whether or not the vector field is conservative (i.e. it can be written as a gradient of a scalar function). If it is conservative, construct a potential function and use it to evaluate the vector line integral $\int_C \vec{F} \cdot d\vec{r}$ where C is a path starting at $(1, 1)$ and ending at $(2, 2)$.

(a) $\vec{F} = (1, 0)$.

(b) $\vec{F} = (y, x + 1)$.

(c) $\vec{F} = (\frac{1}{y} - 2x, y - \frac{x}{y^2})$.