

Math 335-002
Homework #5
Due date: February 11

1. Page 53: problems 3.7 and 3.8

In 3.8, find potential function ϕ only; don't do the line integral

2. Page 64: problems 3.9, 3.10, 3.16, 3.17(a & b only)

3. Find the gradient of a scalar field $f(\vec{r}) = \exp(r)$, where r is the length of the position vector: $r = |\vec{r}|$. Show that the result can be written as $\vec{r} \exp(r) / r$ [note: there is nothing complicated in this problem: don't be scared of position vectors].

See solution to last problem in homework #3 given last year:

http://web.njit.edu/~matveev/Courses/Math335_Spring2007/