Name: _____
ID #: _____

Physics 222 - Spring 2019
★ Homework 2 ★
Chapter 14

1) A vector function **A** is given by:

$$\mathbf{A} = \left(\frac{x^3y^2}{z}\right)\hat{\mathbf{i}} + (4x + 3y^2)\hat{\mathbf{j}} + (z - e^{-x})\hat{\mathbf{k}},$$

a) Calculate the divergence of **A**, $\nabla \cdot \mathbf{A}$.
b) Calculate the curl of **A**, $\nabla \times \mathbf{A}$.

2) For the result in problem 1):
a) Evaluate the divergence of **A** at x=1, y=1, z=1.
b) Evaluate the curl of **A** at x=1, y=1, z=1 and sketch the resultant vector.

3) 14.3
4) 14.6
5) 14.8
6) 14.10a-c
7) 14.11