Assignment 13

Coverage: 16.7, 16.8.

Exercises: 16.7 no. 3, 4, 8, 14, 15.

No need to hand in any problems.

Supplementary Problems

1. Verify the identity
$$\nabla \times \nabla f = \mathbf{0}$$
for any function f.

2. Verify the identity
$$\nabla \cdot \nabla \times \mathbf{F} = 0$$
for any vector field $\mathbf{F}$. Use this fact to show that $x\mathbf{i} + y\mathbf{j} + x^2 z\mathbf{k}$ cannot be the curl of some vector field.