

Homework 12

1. Section 15.8: Problems 5, 7, 9, 15, 19.
2. Section 15.8: Compute the Jacobians for the substitutions $x = r \cos \theta$, $y = r \sin \theta$ in double integral, $x = r \cos \theta$, $y = r \sin \theta$, $z = z$ and $x = \rho \sin \phi \cos \theta$, $y = \rho \sin \phi \sin \theta$, $z = \rho \cos \phi$ in triple integral, respectively.
3. Chap 15, Additional and Advanced Exercises: Problems 11, 12.
4. Section 16.1: Problems 15, 23, 25, 29.
5. Section 16.2: Problems 19, 25, 29(b), 35(a).
See equation (5) in p978 and (6) in p979 for definition of flow, circulation and flux.