

[Submitting HW Tips](#)

HW #10

- 1** **Section 7.1** (Page 356): #10(a).
- 2** **Section 7.2** (Page 373): #1, 4(a)(b).
- 3** **Section 7.3** (Page 382): #14.
- 4** **Section 7.4** (Page 398): #6.
- 5** Compute the line integral $\int_C \vec{\mathbf{F}} \bullet d\mathbf{s}$, where $\vec{\mathbf{F}} = (2xe^{2y} - \cos y) \vec{\mathbf{i}} + (2x^2e^{2y} + x \sin y) \vec{\mathbf{j}}$ and C is any smooth curve from $(1, 0)$ to $(2, 0)$. (Hint: Is $\vec{\mathbf{F}}$ a gradient field ?)
- 6** Compute the area of the surface S parameterized by : $\Phi(u, v) = (u \cos v, u \sin v, v)$, where $D : 0 \leq u \leq \sqrt{8}, 0 \leq v \leq u$.
- 7** Compute the surface integrals $I = \iint_S 4x \, dS$ and $J = \iint_S \vec{\mathbf{F}} \bullet d\mathbf{S}$, where $\vec{\mathbf{F}}(x, y, z) = (z, 4x, 2y + 1)$ and S is that part of the plane $\frac{x}{2} + y + z = 1$ in the 1st octant oriented with **upward** normal.