Homework 11

1. Section 6.2: problem 1, 27, 39.
2. Section 6.1, 6.2: Use any method to find the volume of the ellipsoid $x^2 + y^2 + \dfrac{z^2}{4} \leq 1$.
3. Section 6.3: problems 9, 21 (just find the length of the curve), 25, 26, 29.
   Use any method of your choice, including the method of parametrized curve.
4. Section 6.4: problem 13, 19, 23, 32.
   Use any method of your choice, including the method of parametrized curve.
5. Section 6.4: Compute the surface of the donut obtained by rotating $\mathcal{C} = \{(x-R)^2+y^2 = r^2\}$, $R > r$, around the y-axis by expressing $\mathcal{C}$ as
   (a) $x = R \pm \sqrt{r^2 - y^2}$ (i.e. $S = \displaystyle\int_?^? ?dy$), and
   (b) $x = R + r\cos t$, $y = r\sin t$ (i.e. $S = \displaystyle\int_?^? ?dt$), respectively.
6. Chap 6, Additional and Advanced Exercises: problems 4.