Review of Sections 6.1 and 6.2

1. (no calculator) Sketch and find the area of the region in the first quadrant enclosed by the functions $y = x^5$ and $y = 16x$.

2. (no calculator) Sketch and find the volume of the region enclosed by $y = \sqrt{\sin x}$ and the x-axis between $x = 0$ and $x = \pi$ when revolved around the x-axis.

3. (no calculator) Sketch and find the volume of the region enclosed by $y = \sqrt{x}$ and $y = x^2$ when revolved around the x-axis.

4. (calculator allowed) Sketch and find the volume of the region enclosed by $y = x^2$ and $y = 4x - x^2$ when revolved around the line $y = 6$.

5. (calculator allowed) Sketch and find the volume of the region enclosed by $y = x^{2/3}$, $y = 1$, and $x = 0$ when revolved around the y-axis.

6. (calculator allowed) Sketch and find the volume of the region enclosed by $y = 9 - x^2$, $y = 0$, $x = 2$, and $x = 3$ when revolved around the y-axis.

7. (calculator allowed) Sketch and find the volume of the region enclosed by $y = x^2$ and $y = x^3$ when revolved around the line $x = 1$.

8. (calculator allowed) Find the volume of the solid whose base is bounded by the graphs of $y = x^2 + 1$ and $y = x + 3$ and whose cross sections perpendicular to the x-axis are squares.