Math 152/172 **WEEK in REVIEW 2** **Spring 2017**

Sections 7.1, 7.2, 7.3

1. Find the area of the region bounded by the line $y = x$ and the parabola $y = 6 - x^2$.

2. Find the area of the region between $x = 2\cos x$ and $x = 2 - 2\cos x$, $0 \leq x \leq \pi$

3. Find the area of the region between $x = y^2$ and $x = 32 - y^2$ from $y = -2$ to $y = 2$.

4. Find the area of the region between lines $x = -2y + 5$, $x = y - 1$ and $y = 0$.

5. The base of a certain solid is the region in the $xy-$plane bounded by the parabolas $y = x^2$ and $x = y^2$. Find the volume of this solid if every cross section perpendicular to the $x-$axis is a square with base in the $xy-$plane.

6. Find the volume of a pyramid with height h and rectangular base with dimensions b and $2b$.

7. Find the volume generated by rotating the region bounded by the given curves about the specified line.

   (a) $y = \dfrac{1}{x^4}$, $x = \dfrac{1}{2}$, $x = 1$, $y = 0$, about the y-axis

   (b) $y = x^3$, $x = 0$, $y = 27$, about the x-axis

   (c) $y = \sqrt{x}$, $y = 4x$, about $x = -1$

   (d) $y = x^2$, $x = y^2$, about $y = 3$