## EXAM 2 - MATH 152 Your Name:

Read each problem **very carefully** before starting to solve it. Each problem is worth 10 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Compute the area of the region enclosed by the graphs of the functions  $f(x) = x^2$  and g(x) = 2 - x.

2. Find the volume of the solid resulting from revolving the region bounded by y = x and  $y = \sqrt{x}$  about the line x = 2.

3. Set up the integral for computing the volume of the solid resulting by revolving the region bounded by  $y = \sqrt{x-1}$ , y = 0 and x = 5 around the line y = 3. You do not have to perform the actual integration.

4. Find the length of the curve  $y = \ln(\sec x)$ , for  $0 \le x \le \frac{\pi}{4}$ . (**Hint:** Recall that  $\int \sec x \, dx = \ln |\tan x + \sec x| + C$ .)

5. A 10 ft. chain weighs 30 lb and hangs from the ceiling. Find the work done in lifting the lower end of the chain to the ceiling so that it is level with the upper end.