Magnet Analysis 1A Name_____
Rose

Area between two Curves (Area is always positive, like distance, speed, volume, etc)

1. Find the area of the region between $y = \sec^2 x$ and $y = \sin x$ from $x = 0$ to $x = \frac{\pi}{4}$. (Hint: $y = \sec^2 x$ doesn't look terribly different from $y = \sec x$ on this interval; point-plot).

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

3. Find the area of the region enclosed by the graphs of $y = 2\cos x$ and $y = x^2 - 1$. (Hint: use a calculator for this one. Graph the curves and find their points of intersection, store the values, and integrate numerically via calculator.)

4. Find the area in the first quadrant enclosed by the curves $y = x$ and $y = \frac{x^2}{4}$ and below the line $y = 1$.

5. Find the area enclosed by the curves $y = -x^2 + 3x$ and $y = 2x^3 - x^2 - 5x$.