Written Homework

Your carefully written solutions to the following questions will be due at the beginning of class on Monday, October 27.

1. The area labelled B in the second figure below is twice the area labelled A in the first figure below. Express b in terms of a algebraically.

2. Find the area inside an ellipse \((\frac{x}{a})^2 + (\frac{y}{b})^2 = 1\). (Hint: Start by showing that \(x = a \cos t\) and \(y = b \sin t\) are a parametrization of the ellipse, for \(0 \leq t \leq 2\pi\); then use the formula for area inside a parametric curve.)

3. Sketch the regions bounded between the given curves, and find the areas of those regions. (Hints: You will need to do some algebra to find the points of intersection for the curves. Use your graphing calculator to help you see the curves. Also, you may find it useful to look at a problem ‘sideways’.)
   (a) \(y = 2x^2 - 5x + 1\) and \(y = 1 + x - x^2\)
   (b) \(y = \sin^{-1} x\), \(y = \cos^{-1} x\) and the x-axis.
Daily Practice Problems

You should do the suggested reading below and attempt these exercises after class each day. You will not submit solutions to these questions for grading, but you may use them as notes during the weekly quizzes on Fridays.

After class on **Wednesday, October 22**, read Section 6.1 and work the following exercises:
Section 6.1, # 5, 9, 11, 33

After class on **Thursday, October 23**, work the following exercises:
Section 5.6, # 41  
*Yes, that’s section 5.6 not 6.6*
Page 436, # 63

After class on **Friday, October 24**, work the following exercises:
Section 6.1, # 39, 43