Part I: one this time

No Part I this time; a bit of a break after your Celebration Friday.

Part II: Exercises (prepare for class Monday, February 5)

Complete Example 1 #2–6 on the green Trig Integrals handout.

Part III: Homework Problems (due Wednesday, February 7 at the beginning of class)

Review the guidelines and Sample Homework in the syllabus to make sure your Part III solutions follow them.

1. Consider the finite region bounded by the graphs of $y = x \sin x$, $y = 0$, $x = \pi$, and $x = 0$. Find the following:
   (a) the area of this region.
   (b) the volume of the solid you get when you revolve the region about the x-axis.
   (c) the volume of the solid you get when you revolve the region about the y-axis.
2. Find $\int \sin x \cos x \, dx$ using the method given in each part for the first 4 parts.
   (a) By substitution with $u = \sin x$.
   (b) By substitution with $u = \cos x$.
   (c) Using integration by parts.
   (d) Applying the identity $\sin 2x = 2 \sin x \cos x$ to the integrand and then antidifferentiating.
   (e) You've done the same integral four times and gotten some different answers. Since it's the same integral, your answers should be the same. Explain the differences (i.e., explain how these are actually the same answer).

Celebration of Learning Friday, February 2

Just a reminder that Friday, February 2, will be our first full-class-length Celebration of Learning. It will have problems for each of the learning targets we've covered to that point.