MATH 150

Today

1. Review for Final

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1. All material through Exam III. **Expect:**
   (a) Equation of tangent line
   (b) **Global extrema**
   (c) Derivative concepts (slope/rate of change/definition of the derivative)
   (d) Calculating derivatives (all rules, all functions)
   (e) **Differentials**
   (f) Applications (word problems)
2. Accumulation functions
3. Sigma notation
4. Area approximation
5. Riemann sums
6. Definite integrals (**definition**, interpretation)
7. Indefinite integrals and antiderivatives
8. FTC/NCT
9. Applications

Next Time

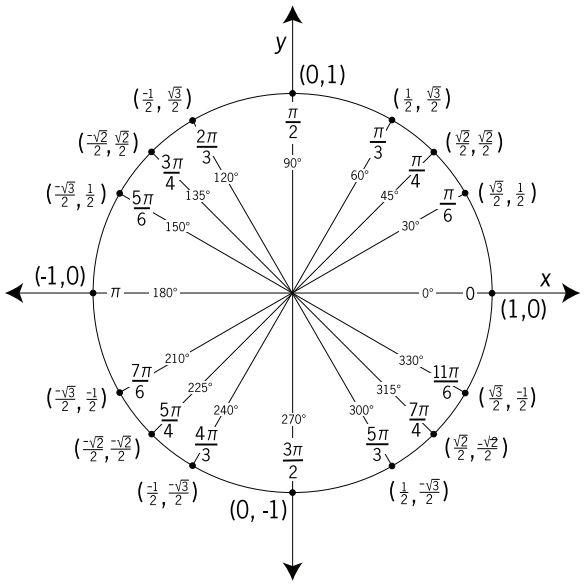
1. Final! Wednesday, 12/14, 8-11am in our classroom.

   (a) You may bring one 8.5"×11" sheet of paper with hand-written notes in **your** writing (both sides). The exam will include the following at the beginning:

Formulas:

$$\sum_{k=1}^{n} k = \frac{n(n+1)}{2} \qquad \sum_{k=1}^{n} k^2 = \frac{n(n+1)(2n+1)}{6} \qquad \sum_{k=1}^{n} k^3 = \frac{n^2(n+1)^2}{4}$$

	Volume	Surface Area
Cylinder	$\pi r^2 h$	$2\pi rh + 2\pi r^2$
Sphere	$\frac{4}{3}\pi r^3$	$4\pi r^2$
Cone	$\frac{1}{3}\pi r^2 h$	$\pi r\ell + \pi r^2$



   (b) You may also use a graphing calculator and/or Desmos. You may **not** use other resources, including (but not limited to) people, texts, or the internet.

   (c) Unless otherwise specified, you **do not** need to simplify your answers. [Note that you may find it advantageous to simplify if you are doing something with the result.]

(d) I intend the exam to be a 2-hour exam, but you will have all three.