MATH 152

Today

1. Questions/WeBWorK
2. Review for Exam

Goals:

1. Summarize our work in this class so far.

Where is today's material used?

Review

1. Parametric Curves
   (a) Definition
   (b) Parameterizations to know: line, line segment, circle
   (c) If $x = f(t)$ and $y = g(t)$ are differentiable functions of t, then $\frac{dy}{dx} = \frac{g'(t)}{f'(t)}$ when $f'(t) \neq 0$.
   (d) Find vertical and horizontal asymptotes and tangent line equations.
2. Area axioms (familiarity)
3. Area and distance relationship (for a velocity graph).
4. The definite integral
   (a) Partitions (and notation)
   (b) Approximation idea
   (c) Riemann sums
   (d) Definition of the definite integral (understanding and computing with it)

(e) Antiderivatives/indefinite integrals ($+C$!)

(f) Properties of integrals

(g) MVT for integrals

(h) Evaluation Theorem and Net Change Theorem

(i) FTC (both parts)

(j) u-substitution (undoes the Chain Rule)

(k) Integration by Parts (undoes the Product Rule)

5. Logistics:

   (a) Start 5 minutes early, go 5 minutes late.

   (b) No need to simplify answers.

   (c) No graphing calculators.

   (d) Expect of a mix of conceptual and computational problems.

   (e) I will provide formulas for $\sum_{i=1}^{n} i$, $\sum_{i=1}^{n} i^2$, and $\sum_{i=1}^{n} i^3$.

Next Time

(a) Exam!

(b) 6.2 the following class period