MATH 1634, Review for Hour Exam 2

- The exam is meant for **50 minutes**. You can take no more than 60 minutes.
- The exam will be on the materials covered in Sections 3.1–3.10.
- You should know all the sine, cosine, and tangent values at special angles (such as \( 0, \pm \pi/6, \pm \pi/4, \pm \pi/3, \pm \pi/2, \ldots \) etc.) at **every quadrant**.
- The necessary formulae regarding Related Rates are the ones that appear in the examples covered in class, in homework questions, or something very basic (such as the circumference of a circle or the volume of a box). **Make sure you know all those formulae. No excuse that you didn’t know the necessary formulae to solve a problem in related rates.**
- Copies of one of my old second hour exams have been distributed in class. Note that #4 on p.6 (Linear Approximation) will not be on the upcoming exam. **Do not expect the actual upcoming exam would be almost identical.**

1. Finding the derivatives \( \frac{dy}{dx} \) or \( \frac{d^2 y}{dx^2} \) using differentiation formulae.
   - \( x^n, e^x \) §3.1, 3.2
   - product rules, quotient rules §3.2
   - trigonometric functions §3.3
   - logarithmic function §3.6
   - the chain rule §3.4
   - implicit differentiation §3.5

2. Position, velocity, acceleration §3.7

3. Finding an equation of a tangent line. §3.1–3.6

4. Related rates §3.9: The questions will be asked (a),(b),\ldots, (f) as done in class.

*Remind you of our class policy for the missing exam:*

- **Remember the policy in case you fall sick:** You must write me an email **BEFORE the exam – no excuse!** If you fail to do so, there will be penalty.
- **If you are late for the exam, I interpret that you do so at your own risk. There won’t be any way to make up your lost time.**