

## Instructions

Prepare a presentation on a topic of your choice related to calculus. The presentation should be 5 to 10 minutes long. It's probably easiest to use a slide show, but if you feel like you'd rather do it just on the whiteboard that's ok too. The presentations will be on next Thursday, July 31st.

## Topic Ideas

As long as it's a topic we haven't done in class any topic related to calculus is ok. Everyone's presentation must be different. Here are some ideas:

1. Applications of calculus to economics
2. AP calculus test prep
3. Taylor series (more details than what we'll discuss in class)
4.  $e^{ix} = \cos(x) + i \sin(x)$
5. Second order linear differential equations
6. Convergence of series (especially the ratio and root test)
7. Related rates problems
8. Applications of calculus to chemistry
9. Applications of calculus to biology
10. Applications of calculus to physics (there are many topics here)
11. Partial derivatives and tangent planes
12. The formal definition of a limit and  $\delta$ - $\epsilon$  proofs
13. Differentials and infinitesimals
14.  $\int \sin^n(x) dx$
15. Induction proofs
16. The trapezoid rule and Simpson's rule
17. Newton's method
18. Improper integrals
19. Vectors, the dot product, and the cross product

## Presentations Rubric

Presentations will be graded on four qualities: (1) mathematical accuracy, (2) comprehensiveness (3) clarity of presentation, (4) fluidity. The first two qualities are worth 50% and the second two are the other 50%.