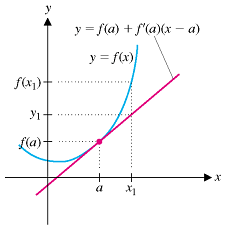
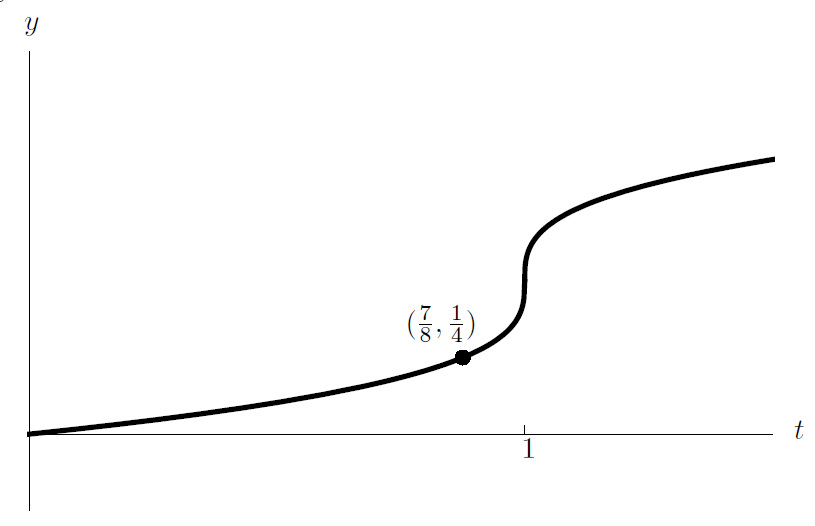
**ClASS DISCUSSION: 3 oCTOBER**

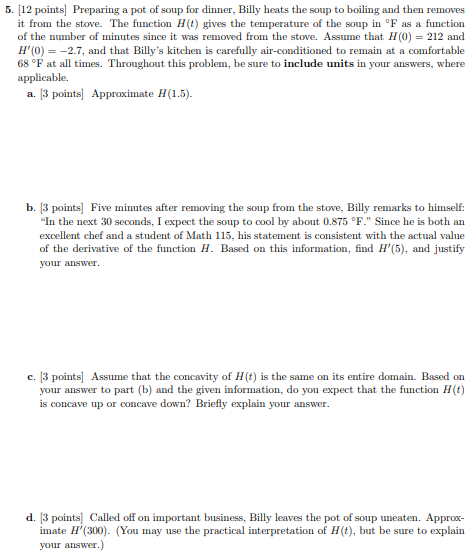
**Linear approximations**



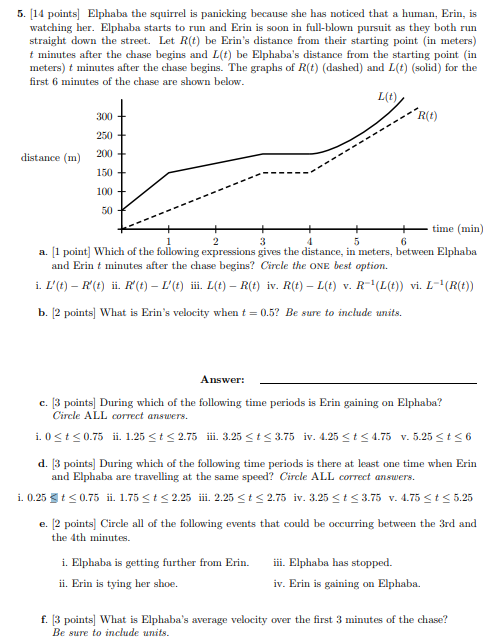
1. Find the linearization of the function at the point x = 1 and use it to approximate . For each approximation, is it an underestimate or an overestimate? Explain. (Here you may use the power rule short cut.)
2. Find the linearization of the function f(x) = sin x at the point x =/6.
3. Find the linearization of the function at the point x =  and use it to approximate the value of approximation an underestimate or an overestimate? Explain.
4. *(U. Michigan)* Given below is the graph of a function h(t). Suppose j(t) is the local linearization of h(t) at t = 7/8.



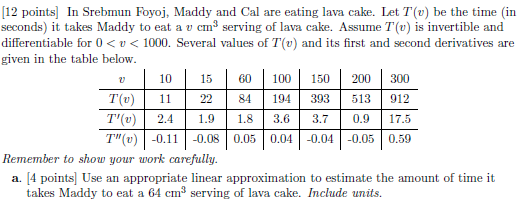
1. Given that for *j*(t).
2. Use your answer from (a) to approximate h(1).
3. Is the approximation from (b) an over- or under-estimate? Explain.
4. Using j(t) to estimate values of h(t), will the estimate be more accurate at t=1 or t = ¾? Explain.

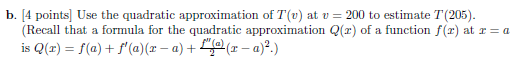


Problem 6



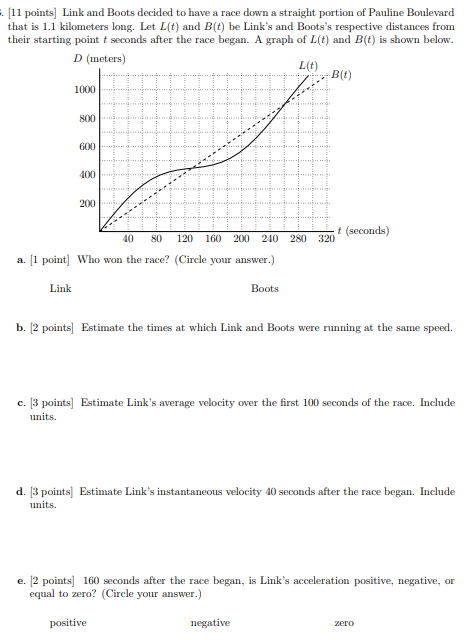
1. *(U. Michigan)*

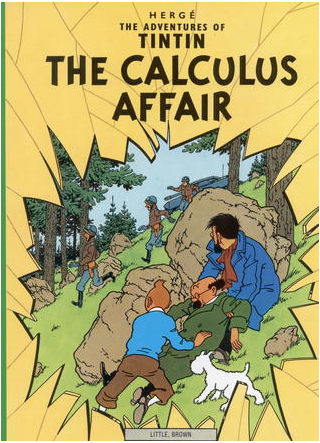






Problem 8





**The Game of Anti-Derivatives:**

*Find an anti-derivative of each of the following functions:*

1. x99 (b) (c) (d) (e) (x3 + x + 1)(x3 – 2x)

[Course Home Page](http://www.math.luc.edu/~ajs/courses/161fall2018/index.pdf)          [Department Home Page](http://www.math.luc.edu/)        [Loyola Home Page](http://www.luc.edu/)