Please complete the following questions, writing out each solution as a proof (in
the style used in lectures) explaining your answers in complete English sentences.

• 10-20
• 10-21
• 10-24 a), b) - for part b) the “condition” I want you to describe geometrically is that the (quadratic) polynomial has a double root.
• 11-3 Please include a justification of your sketch using derivatives.
• 11-5 ii) and iv)
• 11-13

I strongly encourage discussing the problems with other students but work should
be written up individually. Latex documents are encouraged. Bad handwriting is
discouraged. Late hand-ins are not accepted and receive a score of 0.

Jonathan Hickman, Department of Mathematics, University of Chicago, 5734 S. Uni-
versity Avenue, Eckhart Hall Room 414, Chicago, Illinois, 60637.
E-mail address: jehickman@uchicago.edu