

# Homework 1

due Sept 2, 2015

In addition to

**6.1.** 1, 3, 5, 9, 19, 20, 23, 31, 35, 37, 39, 40, 45, 49, 50

**6.2.** 1, 4, 8, 15, 18, 19, 23, 25, 27, 29, 31-50 (odd), 51, 57, 65, 67, 69, 79-90 (odd), 105

complete the following problems.

**Challenge problem.** Find the real number  $\alpha$  such that the curve  $f(x) = e^x$  is tangent to the curve  $g(x) = \alpha x^2$ .

**Coding preparation.** Work through the MATLAB Crash Course pages 1-3 and do the exercise at the bottom of page 3. *Turn in:* (1) the sizes of  $v$  and  $M$ , and (2) the first 10 elements of each row of the matrix. Written by hand is fine.

*Note:* 6.2.105 is an “induction proof” problem, intended for enrichment. Notes on induction proofs, and additional exercises, available on the course website.

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## TO BE GRADED:

**6.1.** 1, 3, 5, 9, 19, 20, 23, 31, 35, 37, 39, 40, 45, 49, 50

**6.2.** 4, 8, 15, 18, 19, 23, 25, 27, 29, 31, 49, 51, 57, 65, 67, 69, 79, 89.

**Challenge problem.**

**Coding preparation.**