Exercises

1. Write a function `expmac(x, n)` that computes e^x using its MacLaurin series truncated to $n + 1$ terms:

$$\exp(x) \approx 1 + x + \frac{x^2}{2} + \frac{x^3}{6} + \cdots + \frac{x^n}{n!}$$

   Test with several values of x, n (including $x < 0$) and compare with Matlab's exact `exp(x)`.
   Can you do it with linear complexity? Can you do it using vectorized instructions only (no for/while cycles)?

2. (*) Write a function `linsolve(A, b)` that solves a linear system $Ax = b$ with a $n \times n$ matrix using Gaussian elimination. You may assume that A is nonsingular. Work on vectors when you need to "subtract one line from another".