1. Use Matlab and perform the following commands:
   a. `eps`
   b. `realmin`
   c. `realmax`
What are these values?

2. Use Matlab to perform the following operations, explain the results you obtained, did you obtain the expected results?
   a. `1 + eps - 1`
   b. `1 + eps/2 - 1`
   c. `realmin/1e10`
   d. `realmin/1e16`
   e. `realmax * 10`
   f. `5/0`
   g. `−113/0`
   h. `inf/−1`
   i. `inf/inf`
   j. `1 + nan`
   k. `nan * 0`

3. a. Consider the problem of finding roots of the polynomial \(x^2 + bx + 1 = 0\). If the data is \(b\) and the solution operator is \(G(b) = (-b \pm \sqrt{b^2 - 4})/2\), find (approximate) the condition number \(K(b)\), is the problem well conditioned, or ill conditioned, explain.
   b. Repeat the above for the polynomial \(x^2 + x + c = 0\), now the data is \(c\).

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