**Part 1 Graphs**

**Part 1 Discussion:**

After plotting the errors obtained as a function of n, our team was able to conclude that it is justified to use the LU or QR-factorizations as opposed of calculating an inverse matrix for a couple of reasons.  First and foremost, as is clearly shown on the graphs, when observing the errors of both LU or QR-factorizations and the errors of calculation by inverse matrix, there is a marginally lower error rate for LU or QR-factorization use that supports its use as a superiorly accurate process.  In addition, the increased speed and efficiency of the LU or QR-factorization process far exceeds the less effective task of finding an inverse matrix, which in comparison to using an LU or QR-factorization is more arduous and complicated.   Thus, the benefit of using LU or QR-factorizations in this way is very clear.   In terms of conditioning error, the output value changes very little in response to a small argument, meaning the condition number is lower and therefore considered more efficient.  By inferring that increased stability exists for a well-conditioned value, it is clear that an LU or QR-factorization process has increased benefit in addition to simply being justified.