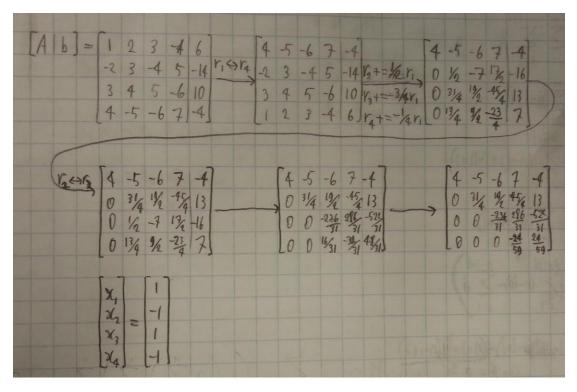
## COMP 350 Assignment 3

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1.

## 2. The number of flops is

$$\sum_{i=1}^{n} \sum_{j=i}^{n} \sum_{k=j}^{n} 2 = \frac{1}{3}n(n+1)(n+2)$$

$$\sum_{i=1}^{n} \sum_{j=i}^{n} \sum_{k=j}^{n} 2$$

$$= \sum_{i=1}^{n} \sum_{j=i}^{n} \sum_{k=j}^{n} 2$$

$$= \sum_{i=1}^{n} \sum_{j=i}^{n} \sum_{k=j}^{n} 2$$

$$= \sum_{i=1}^{n} 2 \sum_{j=1}^{n} (n-j+i)$$

$$= \sum_{i=1}^{n} 2 \sum_{j=1}^{n-i+1} (n-j+i)$$

$$= \sum_{i=1}^{n} (n^{2}-2n_{1}+3n+i^{2}-3i+2)$$

$$= \sum_{i=1}^{n} (n^{2}-2n_{1}+3n+i^{2}-3i+2)$$

$$= \sum_{i=1}^{n} (2n_{1}+i) + n(n^{2}+3n+2)$$

$$= \sum_{i=1}^{n} (2n_{1}+i) + n(n^{2$$

3.

- a. See q3a\_genp.m and q3a\_gepp.m for the source code.
  - GENP: 5n + 1n + 3n = 9n flops and 4 \* (2n + 1) memory locations
  - ullet GEPP: 9n flops and 4\*(2n+1) memory locations
- b. See q3b.m for the source code.
- c. See q3c.m for the source code.

```
>> q3b
avg_imp =
             3.7894
>> q3b
avg_imp =
             2.9249
>> q3b
             4.7632
avg_imp =
>> q3c
avg_imp =
            6.6232e+11
>> q3c
            6.6881e+11
avg_imp =
>> q3c
avg_imp =
          6.7002e+11
```