Problem 1

Given matrix A

1 2 3
4 13 18
7 54 78

R3 = R3 - 7 * R1

1 2 3
4 13 18
0 40 57

R2 = R2 - 4 * R1

1 2 3
0 5 6
0 40 57

R3 = R3 - 8*R2

1 2 3
0 5 6
0 0 9

U

L

1 0 0
4 1 0
7 8 1

Problem 2

Total Floating Point operations as a function of n is 2 * (B)^2 + A

Where A = (n-1) * n / 2

B = (n-1)n(2n-1)/3
Output

```
n=1000, pad=1
time=0.143633s
Done 1000
n=2000, pad=1
time=1.720538s
Done 2000
n=3000, pad=1
time=6.526489s
Done 3000
n=4000, pad=1
time=16.290941s
Done 4000
n=5000, pad=1
time=32.258592s
Done 5000
```

For n = 1000, Gigafp = 2.277
For n = 2000 Gigafp = 3.0986
For n = 3000 Gigafp = 2.757
For n = 4000 Gigafp = 2.618
For n = 5000 Gigafp = 2.582

Problem 3

A

1 2 3 4
2 9 12 15
3 26 41 49
5 40 107 135

Block size b = 2