Practical 2: Complexity Analysis

Exercise 1:

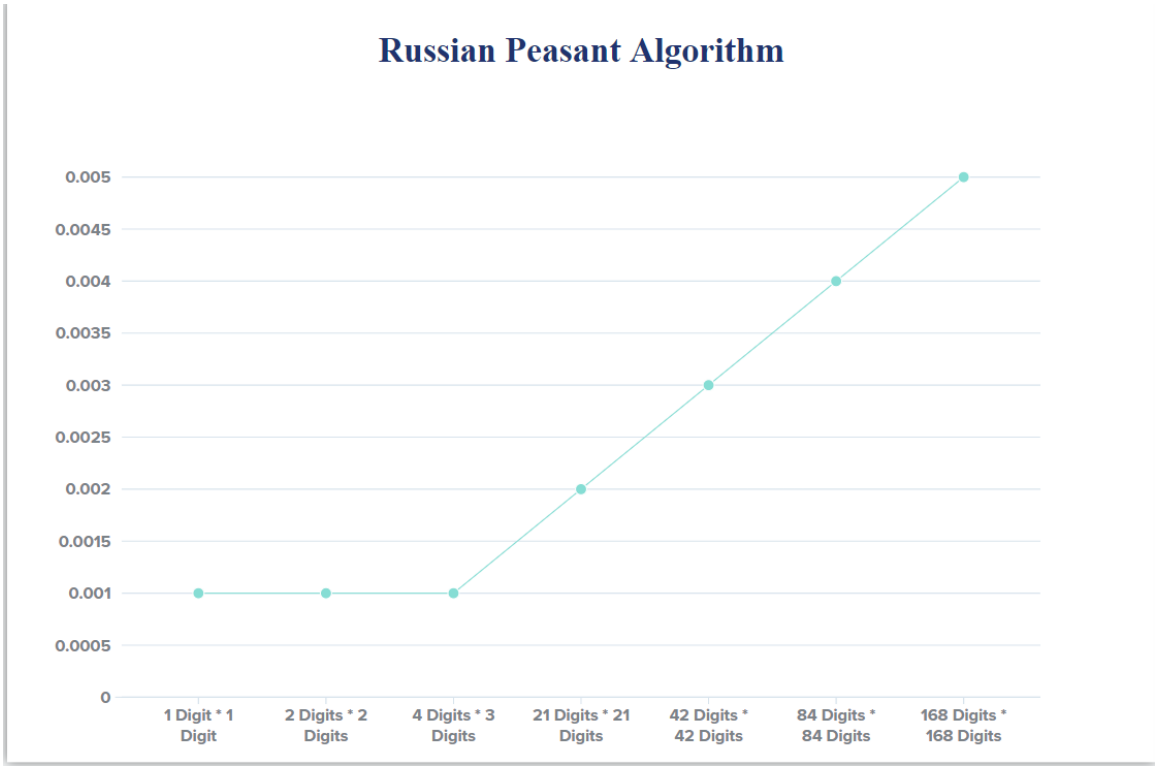
68	139	Addition
34	278	
17	556	556
8	1112	
4	2224	
2	4448	
1	8896	8896
		9456

Exercise 2:

1.

Integer A	Integer B	Time
1	1	.001
2	2	.001
50	20	.001
2000	340	.001
5000000	303432	.001
21 Digits	21 Digits	.002
42 Digits	42 Digits	.003
84 Digits	84 Digits	.004
168 Digits	168 Digits	.005

2.



3.

I think the complexity of this algorithm is O(log n) as from examining the graph from 21 digits onwards the time appears to go up linearly while n, the number of digits appears to roughly go up exponentially. Thus givinh it a complexity of log n.