Jared Jamieson
CSIT 200-01

Part 1: Smallest To Largest

1. log_2 n
2. $log_2 (n^{50})$
3. $n^{1/2}$
4. n
5. n log_2 (n)
6. $n^{1.5}$
7. n^2
8. n^3
9. n^{100}
10. $2^{n/2}$
11. 2^n
12. n!

Part 2:

Big-Oh notation:

1. O(n)
2. O(n)
3. O(n^2)
4. O(n)
5. O(n^3)

	Run Times					
n=	10k:	50k:	100k:	500k:	1m:	10m:
	500:	750:	1,000:	1,500:	2,000:	
Example 1:	0.001s	0.004s	0.01s	0.045s	0.118s	0.955
Example 2:	<1 ms	0.002s	0.004s	0.023s	0.051s	0.498
Example 3:	0.018s	0.069s	0.058s	0.187s	0.25s	
Example 4:	0.002s	0.008s	0.016s	0.087s	0.18s	1.733s
Example 5:	5.065s	17.287s	43.376s	154.418s	365.314s	

Black - Trial B
Red - Trial C

N = 20m
Example 1: 9.55s
Example 2: 6.35s
Example 3: .875s

Example 4: 20.796s
Example 5: 3032.106s

Part 3

	Run Times			
n=	100:	1,000:	10,000:	100,000
prefix_average1:	<1 ms	0.046s	4.799s	475.245s
prefix_average2:	<1 ms	0.005s	0.773s	205.129s
prefix_average3:	<1 ms	<1 ms	0.002s	0.02s

N = 1m
prefix_average1: 47524.5s
prefix_average2: 43073.705
prefix_average3: 0.2s