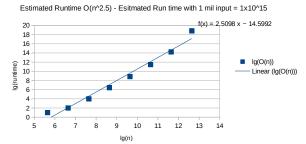
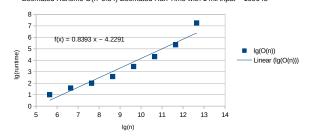
Sheet1

prog1					
n	runtime		lg(n)	lg(O(n))	Estimate runtime
	50	2	5.64385619	1	. O(n^2.5)
	100	4	6.64385619	2	2
	200	16	7.64385619	4	1
	400	86	8.64385619	6.426264755	5
	800	460	9.64385619	8.845490051	
	1600	2823	10.64385619	11.46301341	
	3200	19247	11.64385619	14.23234597	,
	6400	468191	12.64385619	18.83673768	3
prog2					
n			lg(n)		Estimate runtime
	50	_	5.64385619		. O(n^0.84)
	100	3			
	200		7.64385619	2	•
	400	6		2.584962501	-
	800	11		3.459431619	
	1600		10.64385619		
	3200		11.64385619		
	6400	153	12.64385619	7.257387843	3
prog3			lg(n)	lg(O(n))	Estimate runtime
	16	2	4		. O(n^5.35)
	20		4.321928095	2	-
	24		4.584962501		
	28		4.807354922		
	32	14335	-	13.80725428	
	34		5.087462841		
	36		5.169925001		
	38	917270	5.247927513	19.80698693	3

## prog1



 $\label{eq:prog-2} prog~2$  Estimated Runtime O(n^0.84) Estimated Run Time with 1 mil input = 109648



prog3

