Assignment 2 - written Jaeha Huh

1. A table showing the actual running times:

Input size	sum1 $O(n^3)$	sum2 $O(n^2)$	sum3 $O(n)$
128	0.036901	0.0010421	2.09 e-05
256	0.28623	0.0069778	3.99 e-05
512	2.42868	0.016953	8.97 e-05
1024	20.07797	0.086758	0.00016655
2048	163.3566	0.30127	0.00034616
4096	1338.41	1.16987	0.00071007
⋮	⋮	⋮	⋮

2. $2^7 = 128 = n$ Calculation sample:

Input size(n)	max_subsequence_sum1 $O(n^3)$	Sum2 (n^2)
128	0.036901	0.0010421
$256 = 2n$	$(0.036901)(2^3)$	" (2^2)
$512 = 4n$	$(0.036901)(2^6)$	" (2^4)
$1024 = 8n$	" (2^9)	" (2^6)
$2048 = 16n$	" (2^{12})	" (2^8)
$4096 = 32n$	" (2^{15})	" (2^{10})

Sum(n)			
-128 : 2.09e-05	-512 : 2.09e-05	(2^2)	-2048 : " (2^4)
-256 : "	(2)	-1024 : "	(2^3)	-4096 : " (2^5)

2. A table showing the predicted running times:

n = Input size	sum1 $O(n^3)$	sum2 $O(n^2)$	sum3 $O(n)$
$2^7 = 128$	0.036901	0.0010421	2.09e-05
$2^8 = 256$	0.29521	0.0041684	4.18e-05
$2^9 = 512$	2.36166	0.016674	8.18e-05
$2^{10} = 1024$	18.89331	0.066694	0.0001672
$2^{11} = 2048$	151.1465	0.26678	0.0003344
$2^{12} = 4096$	1209.172	1.067111	0.0006688