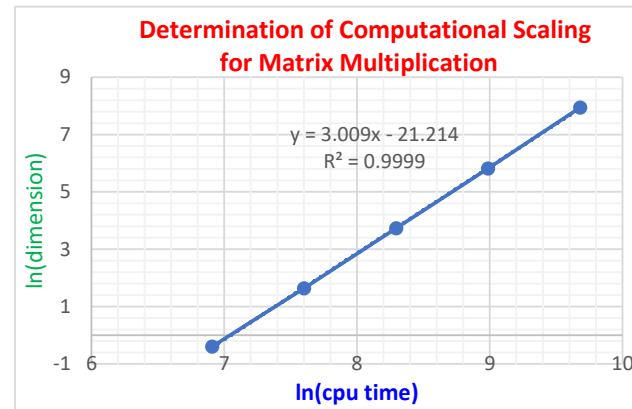


### Matrix Multiplication

x-axis	y-axis	x-axis	y-axis
Dimension	CPU Time (s)	ln(cpu time)	ln(dimension)
1000	0.671	6.907755279	-0.398986142
2000	5.1299	7.60090246	1.635086166
4000	41.5589	8.29404964	3.727111698
8000	334.8936	8.987196821	5.813812869
16000	2807.7729	9.680344001	7.940146886

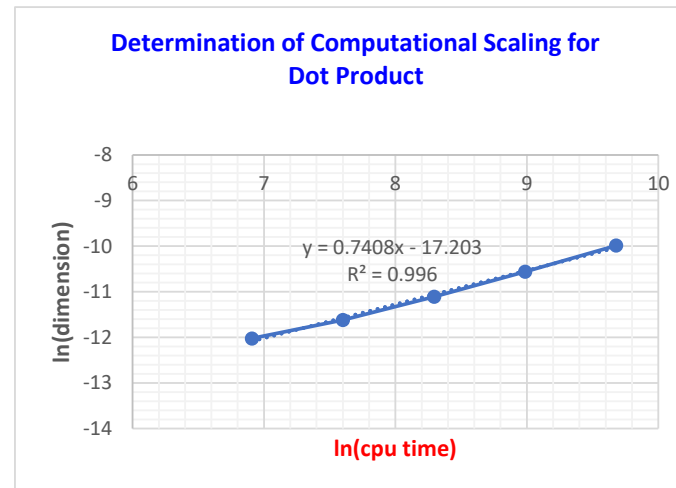
Scaling =  $N^3$   
 from graph  $y = mx + b$   
 slope, m **3.009**



### Dot Product (Vector Multiplication)

x-axis	y-axis	x-axis	y-axis
Dimension	CPU Time (s)	ln(cpu time)	ln(dimension)
1000	0.000006	6.907755279	-12.02375109
2000	0.000009	7.60090246	-11.61828598
4000	0.000015	8.29404964	-11.10746036
8000	0.000026	8.987196821	-10.55741402
16000	0.000046	9.680344001	-9.986869161

Scaling =  $N^1$   
 from graph  $y = mx + b$   
 slope, m **0.7408**



Matrix Vector			
x-axis	y-axis	x-axis	y-axis
Dimension	CPU Time (s)	ln(cpu time)	ln(dimension)
1000	0.0013	6.907755279	-6.645391015
2000	0.0041	7.60090246	-5.496768305
4000	0.0128	8.29404964	-4.358310108
8000	0.0421	8.987196821	-3.167707538
16000	0.1846	9.680344001	-1.689563957

Scaling =  $N^2$   
 from graph  $y = mx + b$   
 slope, m **1.766**

