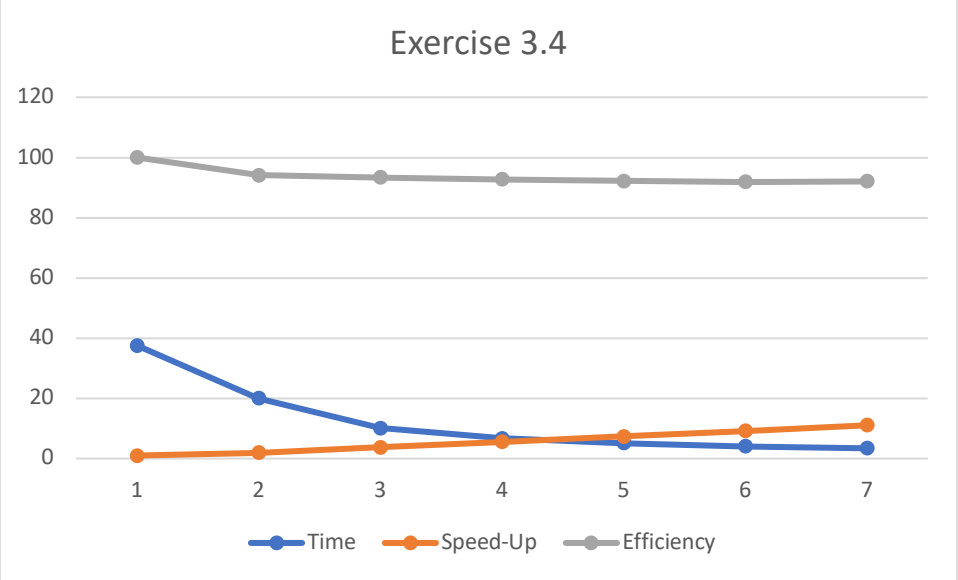
Exercise 3.4

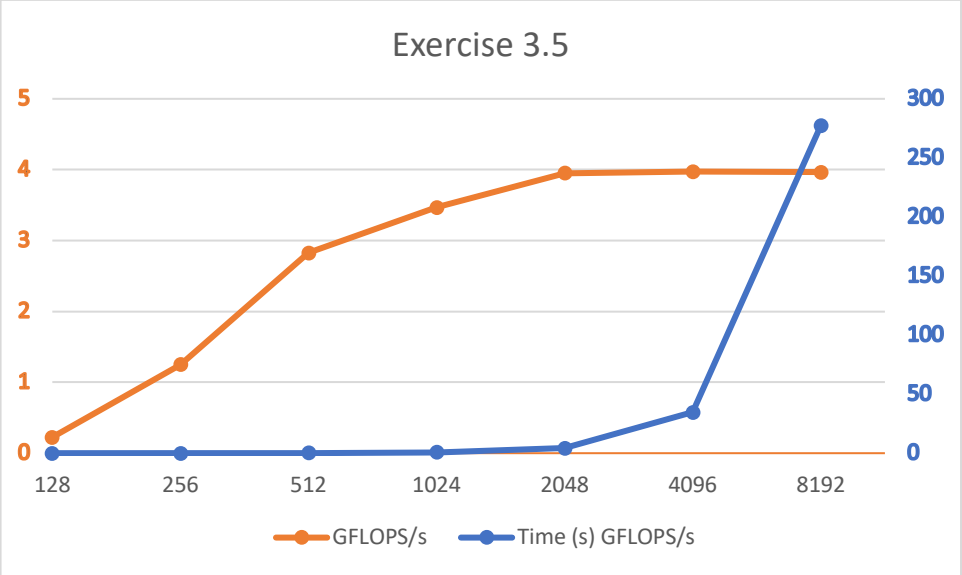
Process	Time	Speed-Up	Efficiency
1	37,56	1	100
2	19,95	1,88270677	94,1353383
4	10,06	3,73359841	93,3399602
6	6,75	5,56444444	92,7407407
8	5,09	7,37917485	92,2396857
10	4,09	9,18337408	91,8337408
12	3,4	11,0470588	92,0588235



As shown in the table there is a significant speed up to be achieved by parallelizing the matrix multiplication. However, it has to be noted that as the number of processes increases, the efficiency of parallelization tends to decrease. The fast increase of speed up is also illustrated in the diagram above (blue line).

Exercise 3.5

Size	Time (s)	GFLOPS/s
128	0,018594	0,225578
256	0,026827	1,25
512	0,094914	2,8282
1024	0,619426	3,466891
2048	4,348465	3,95079
4096	34,584087	3,974052
8192	277,430282	3,9632



As the matrix size increases, the time taken for the multiplication operation also increases exponentially, as expected due to the computational complexity. The performance, measured in GFLOPS/s increases for larger matrix sizes until it reaches a stagnation at 4 GFLOPS/s.