Kinan Dak Al Bab – Assignment 3
201205052 – 28/03/2014

Question 3-) c-) Bench Marking:

- Number of processors: 4 – Distributed Mode
  - M = 1000 (Matrix of 01,000,000 elements): 2.3678 seconds.
  - M = 2000 (Matrix of 04,000,000 elements): 20.9135 seconds.
  - M = 3000 (Matrix of 09,000,000 elements): 90.4417 seconds.
  - M = 4000 (Matrix of 16,000,000 elements): 257.3680 seconds.
  - M = 5000 (Matrix of 25,000,000 elements): 471.6418 seconds.

Question 3-) d-) Efficiency:

- Sequential algorithm cost (cost for one Processor):
  - M = 1000 (Matrix of 01,000,000 elements): 10.5778 seconds.
  - M = 2000 (Matrix of 04,000,000 elements): 104.1113 seconds.
  - M = 3000 (Matrix of 09,000,000 elements): 328.709 seconds.
  - M = 4000 (Matrix of 16,000,000 elements): 981.611 seconds.
  - M = 5000 (Matrix of 25,000,000 elements): 1509.41 seconds

- Efficiency :
  - M = 1000 (Matrix of 01,000,000 elements): E=10.57/2.36 = 4.478
  - M = 2000 (Matrix of 04,000,000 elements): E=104.11/20.91 = 4.97
  - M = 3000 (Matrix of 09,000,000 elements): E=328.7/90.44 = 3.63
  - M = 4000 (Matrix of 16,000,000 elements): E=981.61/257.36 = 3.81
  - M = 5000 (Matrix of 25,000,000 elements): E=1509.41/471.64 = 3.20

Efficiency0020is nearly equal to P, with data getting bigger efficiency drop because of extra communication cost needed to send data over the distributed model.