

CS342 Operating Systems - Spring 2021

Homework #3

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- 1.
- 2.
3. Maximum speedup would be $1/(\text{serial portion})$ which is 4. Limit for the speed up is following:
 $8/(1 + (8-1) \times (0.25)) = 2.9090909090909091$ which is approximately 3.
4. A.

	Finishing Time	Total Waiting Time
A	80	30
B	205	125
C	165	125
D	75	55
E	175	125

B.

	Finishing Time	Total Waiting Time
A	120	70
B	240	145
C	180	105
D	140	65
E	230	115

C.

	Finishing Time	Total Waiting Time
A	143	93
B	240	145
C	190	115
D	150	75
E	229	114

D.

	Finishing Time	Total Waiting Time
A	50	0
B	240	145
C	110	35
D	75	0
E	160	45

E.

	Finishing Time	Total Waiting Time
A	50	0
B	130	115
C	170	135
D	190	135
E	240	175

5. $T1 = (0.4) \times 24 + (0.6) \times 20$

$$= 21.6$$

$$T2 = (0.4) \times 18 + (0.6) \times 21.6$$

$$= 20.16$$

$$T1 = (0.4) \times 30 + (0.6) \times 20.16$$

$$= 24.096 \text{ . Hence the estimate after 3 bursts of lengths is 24.096.}$$