

### HOMEWORK 3

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#### Question 1.

a) FCFS

TABLE 1

A	B	C	D	E	F	G
4	13	15	20	23	24	28

Average waiting time:

$$\frac{1}{7}[0 + (4 - 3) + (13 - 5) + (15 - 7) + (20 - 11) + (23 - 13) + (24 - 21)] = \frac{39}{7}$$

Average completion time:

$$\frac{1}{7}[4 + (13 - 3) + (15 - 5) + (20 - 7) + (23 - 11) + (24 - 13) + (28 - 21)] = \frac{67}{7}$$

b) SJF

TABLE 2

A	B	F	C	E	D	G
4	13	14	16	19	24	28

Average waiting time:

$$\frac{1}{7}[0 + (4 - 3) + (14 - 5) + (19 - 7) + (16 - 11) + (13 - 13) + (24 - 21)] = \frac{30}{7}$$

Average completion time:

$$\frac{1}{7}[4 + (13 - 3) + (16 - 5) + (24 - 7) + (19 - 11) + (14 - 13) + (28 - 21)] = \frac{58}{7}$$

c) SRTF

TABLE 3

A	B	C	D	E	F	E	B	G
4	5	7	12	13	14	16	24	28

Average waiting time:

$$\frac{1}{7}[0 + (4 - 3) + (16 - 5) + (5 - 5) + (7 - 7) + (12 - 11) + (14 - 13) + (13 - 13) + (24 - 21)] = \frac{17}{7}$$

Average completion time:

$$\frac{1}{7}[4 + (24 - 3) + (7 - 5) + (12 - 7) + (16 - 11) + (14 - 13) + (28 - 21)] = \frac{45}{7}$$

TABLE 4

A	B	C	D	B	E	F	G
4	9	11	16	20	23	24	28

d) RR

Average waiting time:

$$\frac{1}{7}[0 + (4 - 3) + (16 - 9) + (9 - 5) + (11 - 7) + (20 - 11) + (23 - 13) + (24 - 21)] = \frac{38}{7}$$

Average completion time:

$$\frac{1}{7}[4 + (20 - 3) + (11 - 5) + (16 - 7) + (23 - 11) + (24 - 13) + (28 - 21)] = \frac{66}{7}$$

**Question 2.**

TABLE 5

Time	Q0	Q1	Q2
0	A(25)		
5	B(28)A(20)		
8	B(28)	A(17)	
16		B(20)A(17)	
19	C(11)	B(20)A(14)	
25	D(19)C(5)	B(20)A(14)	
27	D(19)	C(3)B(20)A(14)	
35		D(11)C(3)B(20)A(14)	
36	E(33)	D(11)C(3)B(20)A(13)	
44		E(25)D(11)C(3)B(20)A(13)	
56		E(25)D(11)C(3)B(20)	A(1)
72		E(25)D(11)C(3)	B(4)A(1)
75		E(25)D(11)	B(4)A(1)
86		E(25)	B(4)A(1)
102			E(9)B(4)A(1)
103			E(9)B(4)
107			E(9)
116			