

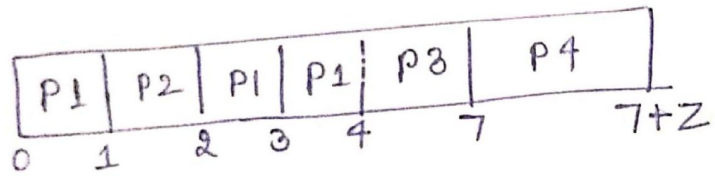
Sol^m 1/

Process	Arrival Time	CPU Burst Time
P1	0	3
P2	1	1
P3	3	3
P4	4	$\boxed{z=2}$ Answer

Avg. waiting time = 1 millisecond (given)

Gantt chart

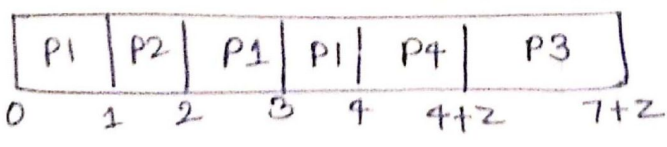
Case I : if $z > 3$



⇒ Avg wt.	P1	P2	P3	P4
	1	0	1	3

$$\Rightarrow \text{Avg. wt} = \frac{1+0+1+3}{4} = \frac{5}{4} = 1.25 > 1 \text{ (wrong assumption)}$$

Case II if $z \leq 3$



wt.	P1	P2	P3	P4
	1	0	z+1	0

$$z+2 = 4$$

$$z = 4 - 2$$

$$\boxed{z=2}$$

$$\Rightarrow \text{avg. wt} = \frac{z+1}{4} = 1$$

Sol^m 27.

P1	P2	P3
$D = D + 20$	$D = D - 50$	$D = D + 10$

X : min^m value

Y : max^m value

then $Y - X$?

Sequence of processing that could be:

$$P1 \ P2 \ P3 : D = 100 + 20 \xrightarrow{P1} 120 \xrightarrow{P2} 70 \xrightarrow{P3} 80$$

$$P1 \ P3 \ P2 : D = 120 \rightarrow 120 + 10 = 130 \rightarrow 130 - 50 = 80$$

$$P2 \ P1 \ P3 : D = 100 - 50 = 50 \rightarrow 50 + 20 = 70 \rightarrow 70 + 10 = 80$$

$$P2 \ P3 \ P1 : D = 50 \rightarrow 50 + 10 = 60 \rightarrow 60 + 20 = 80$$

$$P3 \ P1 \ P2 : D = 100 + 10 = 110 \rightarrow 110 + 20 = 130 \rightarrow 130 - 50 = 80$$

$$P3 \ P2 \ P1 : D = 110 \rightarrow 110 - 50 = 60 \rightarrow 60 + 20 = 80$$

$$\min^m \text{ value} = \max^m \text{ value} = 80$$

$$\Rightarrow Y - X = 80 - 80$$

$$\boxed{Y - X = 0} \text{ Answer}$$

NOTE: Min^m value and Max^m value at any instance of execution are 50 and 130 respectively.

then

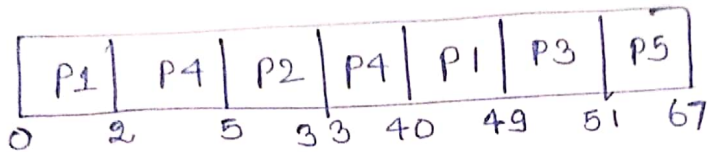
$$Y - X = 130 - 50$$

$$\boxed{Y - X = 80}$$

Sol^m
837.

Process	Arrival Time	CPU Burst time	Priority	completion Time	Turn-around Time	waiting Time
P1	0	11	2	49	49	38
P2	5	28	0	33	28	0
P3	12	2	3	51	39	37
P4	2	10	1	40	38	28
P5	9	16	4	67	58	42

Gantt chart



So,

$$\text{Avg. wt} = \frac{38 + 0 + 37 + 28 + 42}{5}$$

$$= \frac{145}{5}$$

Avg wt: = 29 ms	Answer
-----------------	--------

Sol^m 4 and 5

You may refer class notebook.