

### Problem 3

reference string

1	2	3	4	2	1	5	2	1	2	3
1	1	1	4	4	2	5	5	5	5	3
	2	2	2	2	2	2	2	2	2	2
		3	3	3	1	1	1	1	1	1
P.f.	P.f.	P.f.	P.f.		P.f.	P.f.				P.f.

LRU with  
3 frames  
7 page faults

reference string

1	2	3	4	2	1	5	2	1	2	3
1	1	1	4	4	4	4	2	2	2	3
	2	2	2	2	1	1	1	1	1	1
		3	3	3	3	5	5	5	5	5
P.f.	P.f.	P.f.	P.f.		P.f.	P.f.	P.f.			P.f.

FIFO with  
3 frames  
8 page faults

reference string

1	2	3	4	2	1	5	2	1	2	3
1	1	1	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2	2	2
		3	4	4	4	5	5	5	5	3
P.f.	P.f.	P.f.	P.f.			P.f.			P.f.	

Optimal with  
3 frames  
6 page faults

Since 3 is the last page I changed it with the 5 which is used before others