Name _____

HW7: Virtual Memory and Storage Scheduling

1) Given a 3 frame VMM and the page request sequence below (it's the top row), perform the VMM **First In First Out** page replacement policy (complete the table) to determine the total number of page faults for the sequence.

F	*1*	*2*	*3*	*4*	*2*	*4*	*5*	*1*	*6*	*3*	*7*	*5*	*3*	*2*	*6*	*6*	*2*	*4*	*5*	*3*	*2*	*1*	*5*	*1*	*6*	*3*	*4*	*2*	*1*
0	1	2	3	4	4	4	5	1	6	3	7	5	5	2	6	6	6	4	5	3	2	1	5	5	6	3	4	2	1
1	-	1	2	3	3	3	4	5	1	6	3	7	7	5	2	2	2	6	4	5	3	2	1	1	5	6	3	4	2
2	-	-	1	2	2	2	3	4	5	1	6	3	3	7	5	5	5	2	6	4	5	3	2	2	1	5	6	3	4

How many page faults? 23

2) Given a 4 frame VMM and the page request sequence below (it's the top row), perform the VMM **Least Recently Used** page replacement policy (complete the table) to determine the total number of page faults for the sequence.

F	*1*	*2*	*3*	*4*	*2*	*4*	*5*	*1*	*6*	*3*	*7*	*5*	*3*	*2*	*6*	*6*	*2*	*4*	*5*	*3*	*2*	*1*	*5*	*1*	*6*	*3*	*4*	*2*	*1*
0	1	2	3	4	2	4	5	1	6	3	7	5	3	2	6	6	2	4	5	3	2	1	5	1	6	3	4	2	1
1	-	1	2	3	4	2	4	5	1	6	3	7	5	3	2	2	6	2	4	5	3	2	1	5	1	6	3	4	2
2	-	-	1	2	3	3	2	4	5	1	6	3	7	5	3	3	3	6	2	4	5	3	2	2	5	1	6	3	4
3	-	-	-	1	1	1	3	2	4	5	1	6	6	7	5	5	5	3	6	2	4	5	3	3	2	5	1	6	3

How many page faults? 21

3) Given a 3 frame VMM and the page request sequence below (it's the top row), perform the VMM **Optimal** page replacement policy (complete the table) to determine the total number of page faults for the sequence.

F	*1*	*2*	*3*	*4*	*2*	*4*	*5*	*1*	*6*	*3*	*7*	*5*	*3*	*2*	*6*	*6*	*2*	*4*	*5*	*3*	*2*	*1*	*5*	*1*	*6*	*3*	*4*	*2*	*1*
0	1	2	3 (7 (5	4 (2 (4	4 (1 (3	4 (12)	5 (5 (2	5 (4 (14	5 (3 (6)	5 (2 (3)	5 (1 (2)	5 (7 (1	5 (6 (7	5 (5 (6	5 (4 (1)	5 (3 (9)	5 (2 (8)	5 (1 (4	5 (4 (5	5 (3 (7	5 (2 (6	5 (1 (3	5 (i)	5 (i)	6 (i)	5 (i)	4 (i)	2 (i)	2
1	-	1	2 (2	2 (1	2 (9	2 (8	2 (7	2 (6	2 (5	2 (4	7 (i)	7 (i)	7 (i)	2 (3	2 (2	2 (1	2 (4	2 (3	2 (2	2 (1	2 (7	1 (2	1 (1	1 (5	1 (4	1 (3	1 (2	1 (1	1
2	-	-	1 (5)	1 (4)	1 (3)	1 (2)	1 (1)	1 (14)	6 (6)	3 (3)	3 (2)	3 (1)	3 (7)	3 (6)	6 (1)	6 (9)	6 (8)	4 (9)	4 (8)	3 (6)	3 (5)	3 (4)	3 (3)	3 (2)	3 (1)	3 (i)	3 (i)	3 (i)	3

How many page faults? 16