

Name Ricky Chen**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

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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 | 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 |

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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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | 1 | 1 | 1 | 1 | 6 | 3 | 3 | 3 | 3 | 3 | 6 | 6 | 6 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 2 |
| 1 | | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 7 | 7 | 7 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2 | | | 1 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 |

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How many page faults?

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