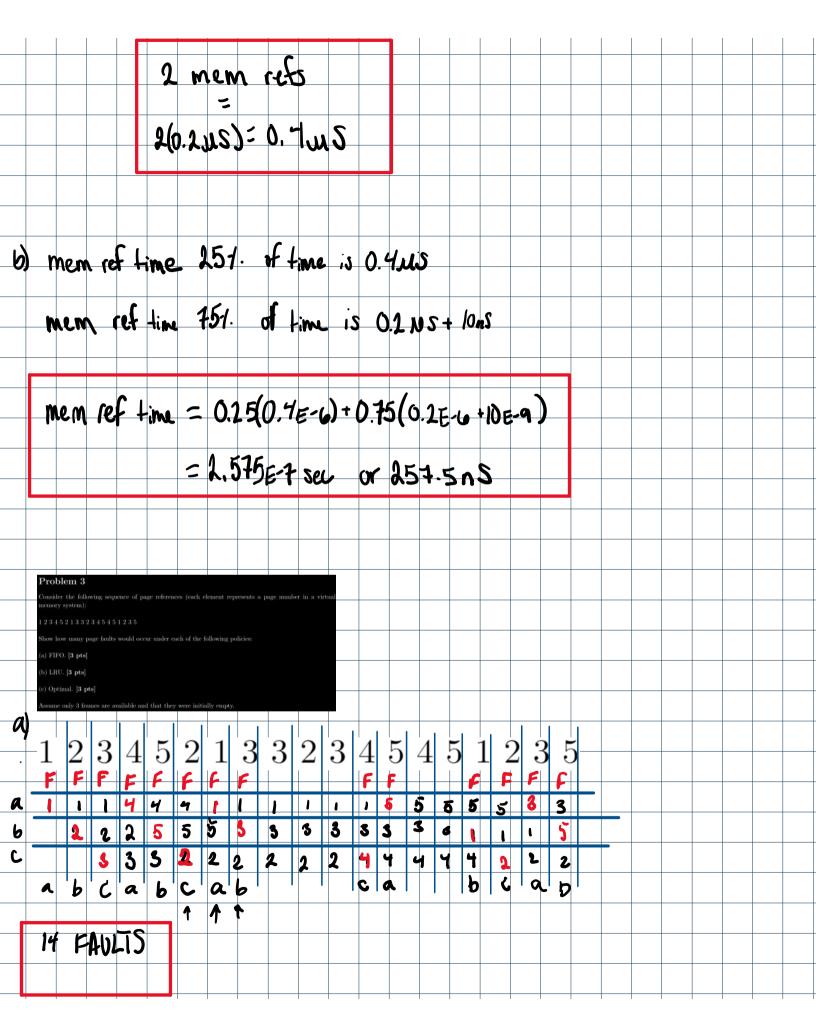
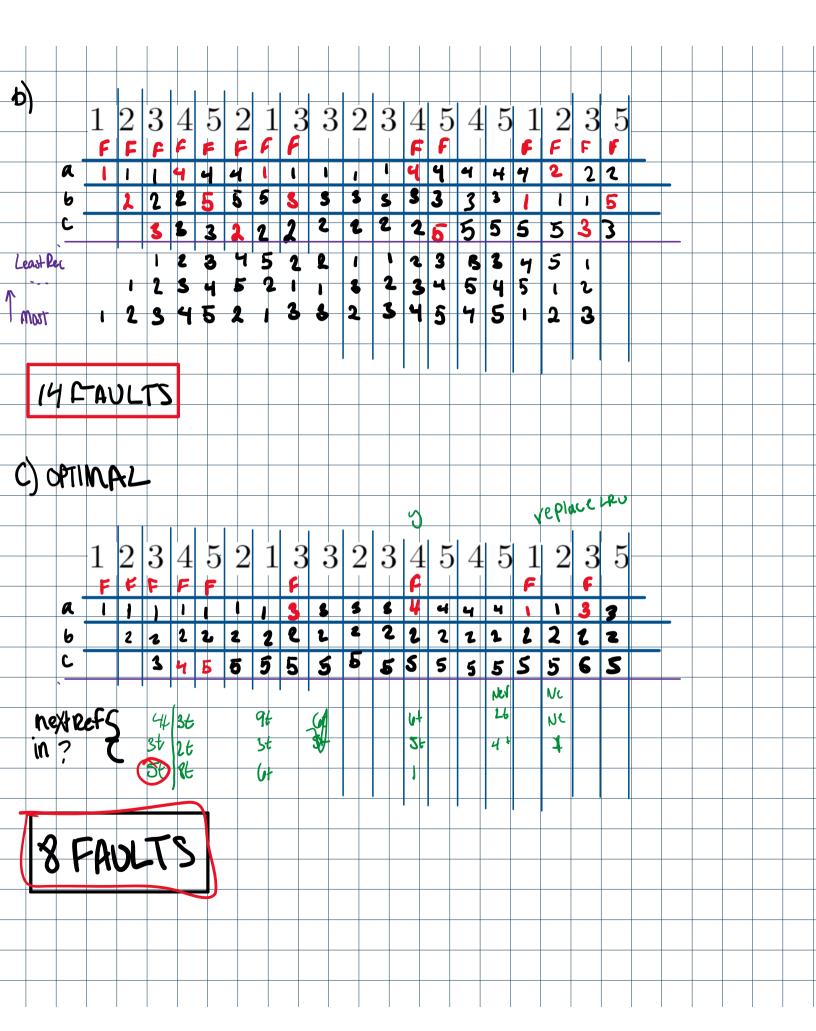
CS4328 OS HW4 Saturday, April 27, 2024 9:56 PM	
Answer	
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Problem 1	
Consider a simple paging system with the following parameters: 2 ³² bytes of physical memory; page size of	
2 ¹² bytes; 2 ¹⁶ pages of logical address space. Answer the following questions: [10 pts]	
(a) How many bits are in a logical address? (b) How many bytes are in frame?	
(c) How many bits in the physical address specify a frame?	
(d) How many entries in the page table	
(e) How many bits in each page table entry? Assume each page table entry includes a valid/invalid bit.	
(A)	
M=16: loits in page number	
N=12: 6 ts to position bytedocta / page offset	
M-N = Page numbers n=offset = logical addr	
page number + page offset = logical adde	
(1.95) (1.95) (1.95) (1.95)	
1 1 1 0 7 1 1 1 4	
logical aldr has 28 bits	
6	
lage site == Frame site	
2'2 = Frame S: EC = 4096 bytes	
2 - rrame size - 7076 bytes	
C) Page Size = 2' = Frame Size	
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bits in physical addi = 10g2 (num frames)	

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sider a paging system v	rith page table	stored in mem	nory, answer	the following	g [3 pts e	each]:												
If a memory reference t	akes 0.2 micro	seconds, how lo	ong does a p	aged memory	y reference	e take?												
If we add 64 associative at is the effective memo	ry reference ti																	
sters takes 10 nanosecon																		
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	referen	ice stri		flength	P wi	th N d	ocess wit listinct [
	(a) Wl	nat is t	he lowe	r boun	d on th	ie num	ber of p	age fau	lts?																
	(b) WI	hat is	the upp	er bour	id on t	he nun	nber of p	page fai	ilts?																
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