Shiwei Huang Exam Question

Major knees could be seen when:

window size = 18 - 27	delta = 9	page fault rate = 28	page fault = 45
window size = 34 - 47	delta = 13	page fault rate = 56	page fault = 23
window size = 52 - 65	delta = 13	page fault rate = 62	page fault = 21
window size = 70 - 83	delta = 13	page fault rate = 68	page fault = 19
window size = 88 -101	delta = 13	page fault rate = 76	page fault = 17
window size = 106-119	delta = 13	page fault rate = 86	page fault = 15
window size = 124 - 137	delta = 13	page fault rate = 100	page fault = 13
window size = 142 - 155	delta = 13	page fault rate = 118	page fault = 11
window size = 160 - 173	delta = 13	page fault rate = 144	page fault = 9
window size = 178 - 191	delta = 13	page fault rate = 186	page fault = 7
window size = 192 - 200	delta = 13	page fault rate = 217	page fault = 6

Because the window size that gives the same page fault has delta of 13. It is likely that the window just moves from the string of "28272272927222" from one character to the other since the string of "28272272927222" length is 14. To be more specific, it is likely that the string "28272272927222" repeat 10 times which gives a length of 140. And the repetition string of "28272272927222" is likely in the Working Set. Thus, despite the increase of the window size, page fault rate stays the same.

For the window size ranges from 140 - 200, it is likely that the Working Set include string of "373338393373737333". Since all the character of "373338393373737333"*10 Times + string of (3637322)(272733733 + "373338393373737333"* 9 Times + (3637322)(272733733 + 373338393373737333 * 8 Times + string of (3637322)(272733733… that this string is likely in the Working Set as well, thus, increase in window size won't affect the page fault, thus, won't affect the page fault rate.

Reference String

272722(ONE:28272272927222)(TWO:28272272927222)(THREE:28272272927222)(FOUR:28272272927222)(FIVE:28272272927222)(SIX:28272272927222)(SEVEN:28272272927222)(EIGHT:28272272927222)(NINE:28272272927222)(TEN:28272272927222)(272722)(272733733(ONE:373338393373737333)(TWO:373338393373737333)(THREE:373338393373737333)(FOUR:373338393373737333)(FIVE:373338393373737333)(SIX:373338393373737333)(SEVEN:373338393373737333)(EIGHT:373338393373737333)(NINE:3733383933737337333)(TEN:373338393373737333)(3637322)(272733733(ONE:373338393373737333)(TWO:3733383933737337333)(THREE:373338393373737333)(FOUR:373338393373737333)(FIVE:373338393373737333)(SIX:373338393373737333)(SEVEN:373338393373737333)(EIGHT:373338393373737333)(NINE:3733383933737337333)(3637322)(272733733(ONE:373338393373737333)(TWO:373338393373737333)(THREE:3733383933737337333)(FOUR:373338393373737333)(FIVE:373338393373737333)(SIX:373338393373737333)(SEVEN:373338393373737333)(EIGHT:373338393373737333)(3637322)(272733733(ONE:373338393373737333)(TWO:373338393373737333)(THREE:373338393373737333)(FOUR:373338393373737333)(FIVE:373338393373737333)(SIX:373338393373737333)(SEVEN:373338393373737333)(3637322)(272733733)(ONE:373338393373737333)(TWO:373338393373737333)(THREE:373338393373737333)(FOUR:373338393373737333)(FIVE:373338393373737333)(SIX:373338393373737333)(3637322)(272733733)(ONE:373338393373737333)(TWO:373338393373737333)(THREE:373338393373737333)(FOUR:373338393373737333)(3637322)(272733733)(ONE:373338393373737333)(TWO:373338393373737333)(THREE:373338393373737333)(3637322)(272733733)(ONE:373338393373737333)(TWO:373338393373737333)(3637322)(272733733)(ONE:3733383933737337333)(33637322)

272722: LENGTH6
28272272927222: LENGTH14
3637322: LENGTH7
272733733: LENGTH9
373338393373737333: LENGTH18