Problem 4

a) For P_1 $ws(9) = \{1,2,3,4,7\}$ size = 5

For P_2 $ws(9) = \{3,4,5,6\}$ size = 4

For P_3 $ws(9) = \{1,2,7,8,9\}$ size = 5

b) Thrashing will occur if $D > m$ → number of frames
→ at time 9

$D = ws(P_1) + ws(P_2) + ws(P_3) = 5+4+5 = \underline{14}$

Since $14 > 10$ thrashing would occur at time 9

c) $ws(7)$ for P_1 $\{1,2,3,4,5,7\}$ size = 6

$ws(7)$ for P_2 $\{1,3,4\}$ size = 3

$ws(7)$ for P_3 $\{2,3,7,8,9\}$ size = 5

$D = 6+3+5 = 14$ if $D \leq m$ then there would be no thrashing.

So there should be at least 14 frames.