READ OPERATION

$$\text{Total Read count time} = \text{Read hit count} \times 1ns + \text{Read miss count} \times 1ns$$

$$+ \ (\text{Read Replace count} + \text{Read WB count}) \times 90 + (BL-1)15 \ ns.$$

WRITE OPERATION:

WS = 0 ; WriteBack shatergy

$$\text{total write count time} = \text{write hit count} \times 1ns + \text{write miss count} \times 1ns$$

$$+ \ 90 + (BL-1)15 \ ns$$

WS = 1 ; writeThrough Allocate

$$\text{total write count time} = \text{write CPU2Mem count} \times 90ns$$

WS = 2 ; writeThrough Non- Allocate

$$\text{total write count time} = \text{write CPU2 Mem count} \times 90ns$$

$$\text{TOTAL TIME} = \text{total read count time} + \text{total write count time}.$$