$$T_{RAS} = T_{RP} + T_{RCP} \implies \begin{cases} T_{RAS_1} = 32,2 \times 10^{-12} + 0,8415 \times 10^{-12} \\ \boxed{= 33,0415 \text{ ps}} \leftarrow \\ \\ T_{RAS_2} = 32,2 \times 10^{-12} + 0,4683 \times 10^{-12} \\ \qquad = 32,6683 \text{ ps} \quad X \\ \to \text{Como } T_{RAS_1} \text{ é maior,} \\ \quad \text{é o utilizado.} \end{cases}$$

$$T_{RP} = RC_d \ln \frac{\frac{V_{DD}}{2}}{0,1 \frac{V_{DD}}{2}}$$

$$= 32,2 \times 10^{-12} \text{ s}$$

$V_{DD} = 1,2 V$

$C_c = 33 fF$

$C_d = 0,7 pF$

$\Delta_N = 70 mV$

$R_{on} = 20 \Omega$

$T_s = 30 ps$

$T_{cc} = 40 ps$

$$V_f = V_d + \frac{C_c}{C_d} V_c$$

$$\begin{cases} V_c = 0 \implies V_f = V_d = \frac{V_{DD}}{2} = 0,6 V \\ \\ V_c = V_{DD} \implies V_f = V_{DD} \left(\frac{1}{2} + \frac{C_c}{C_d} \right) = \\ \qquad \qquad = 0,6566 V \end{cases}$$

$$T_{RCP} = RC_d \ln \frac{V_f}{\frac{V_{DD}}{2} - 35 \times 10^{-3}}$$

$$\begin{cases} V_c = 0 \implies T_{RCP} = RC_d \ln \frac{0,6}{0,6 - 35 \times 10^{-3}} \\ \qquad \qquad = 0,8415 \times 10^{-12} \text{ s} \\ \\ V_c = V_{DD} \implies T_{RCP} = RC_d \ln \frac{0,6566}{0,6 + 35 \times 10^{-3}} \\ \qquad \qquad = 0,4683 \times 10^{-12} \text{ s} \end{cases}$$