REŠENJA ZADATAKA

2.

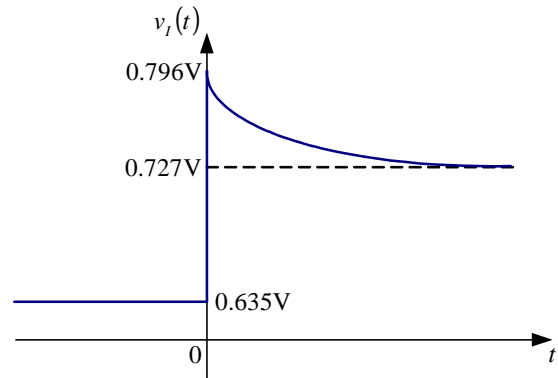$$v_I(t) = \begin{cases} 0.635\text{V} = const, & za\ t < 0 \\ 0.727\text{V} + 0.069 \cdot e^{-\frac{t}{118.44\mu s}}, & za\ t > 0 \end{cases}$$

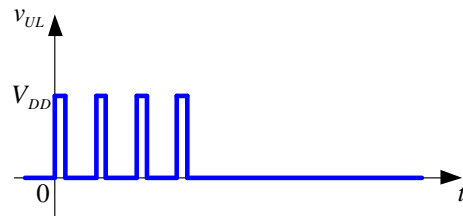**4.** Za $t < 0$ je: $v_X = V_{DD}$, $v_Y = V_{DD}$, $v_Z = 0$.

Ako se zanemari Δt, za $0 < t < T_P$ je:
$v_X = 0$
$v_Y(t) = V_{DD} - [V_{DD} - 0] \cdot e^{-\frac{t}{RC}} = 5\text{V} \cdot (1 - e^{-1000t})$
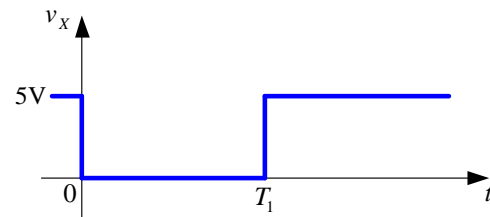$v_Z = V_{DD}$

Ako se zanemari Δt, za $T_P < t < 2T_P$ je:
$v_X = 0$
$v_Y(t) = V_{DD} - [V_{DD} - 0] \cdot e^{-\frac{t-T_P}{RC}} = 5\text{V} \cdot (1 - e^{-1000(t-T_P)})$
$v_Z = V_{DD}$

Ako se zanemari Δt, za $2T_P < t < 3T_P$ je:
$v_X = 0$
$v_Y(t) = V_{DD} - [V_{DD} - 0] \cdot e^{-\frac{t-2T_P}{RC}} = 5\text{V} \cdot (1 - e^{-1000(t-2T_P)})$
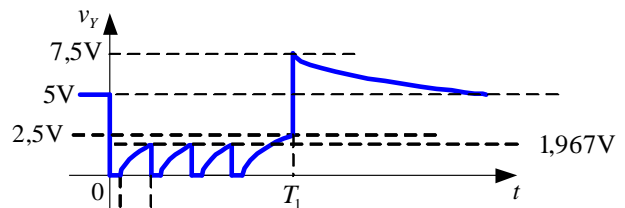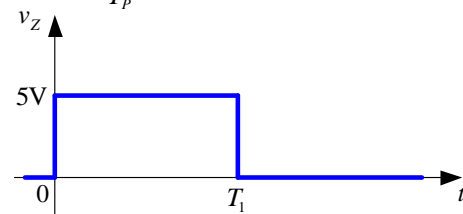$v_Z = V_{DD}$

Ako se zanemari Δt, za $3T_P < t < T_1$ je:
$v_X = 0$
$v_Y(t) = V_{DD} - [V_{DD} - 0] \cdot e^{-\frac{t-3T_P}{RC}} = 5\text{V} \cdot (1 - e^{-1000(t-3T_P)})$
$v_Z = V_{DD}$

Ako se zanemari Δt, za $t > T_1$ je:
$v_X = V_{DD}$
$v_Y(t) = V_{DD} - [V_{DD} - \frac{3V_{DD}}{2}] \cdot e^{-\frac{t-T_1}{RC}} = 5\text{V} + 2{,}5\text{V} \cdot e^{-1000(t-T_1)}$
$v_Z = 0$

$T_1 = 3T_P + 0{,}001\ln 2 = 2{,}193ms$

6. a) Prekidač je zatvoren za $Q_i = 0$, a otvoren za $Q_i = 1$.

b) $R_S = 1,15\text{k}\Omega$ $\qquad\qquad R_0 = 75\text{k}\Omega \qquad R_1 = 35\text{k}\Omega \qquad R_2 = 15\text{k}\Omega \qquad R_3 = 5\text{k}\Omega$

c) $R_{bo} = 1,67\text{k}\Omega$ $\qquad\qquad V_{MAX} = 4,375\text{V} \qquad V_{MIN} = -5\text{V}$