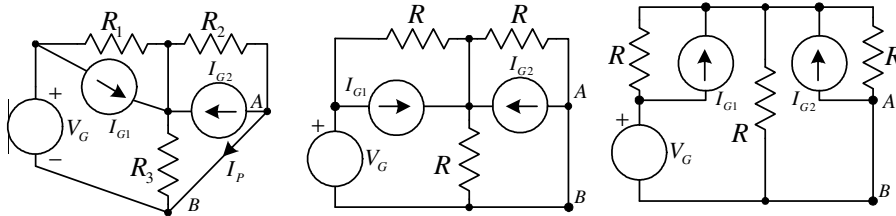


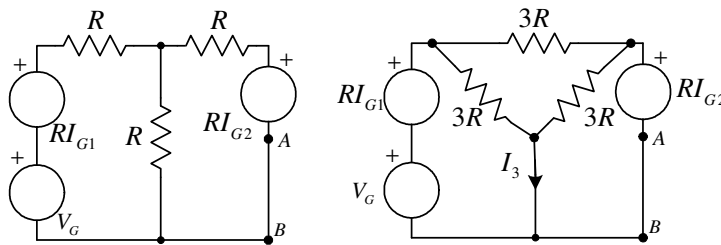
REŠENJA

1. a) Važi: $I_3 = k_1 \cdot V_G + k_2 \cdot I_{G1} + k_3 \cdot I_{G2}$. Ako se u prethodnu jednačinu zameni $k_1 = I'_3 / V_G$, $k_2 = I''_3 / I_{G1}$, $k_3 = I'''_3 / I_{G2}$ dobija se $I_3 = V_G \cdot I'_3 / V_G + I_{G1} \cdot I''_3 / I_{G1} + I_{G2} \cdot I'''_3 / I_{G2} = I'_3 + I''_3 + I'''_3$

b) Ako se uzme u obzir da je $R_1 = R_2 = R_3 = R = 10k\Omega$, kolo može da se nacрта na drugačiji način:



A zatim T teoremom i transformacijom zvezde u trougao:

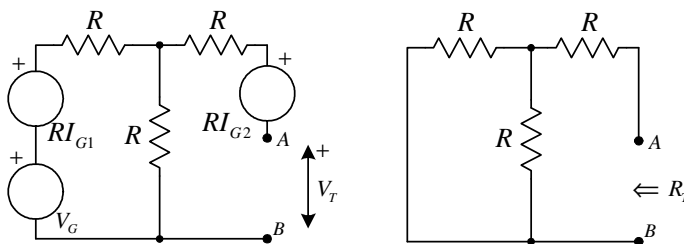


Sada je očigledno da je $I_3 = V_G / 3R + I_{G1} / 3 + I_{G2} / 3 \Rightarrow k_1 = 1/3R, k_2 = k_3 = 1/3$

c) $I_3(t) = k_1 \cdot V_G + k_2 \cdot I_{G1} + k_3 \cdot I_{G2} = 0.1mA + 0.33mA \cdot \cos t - 0.33mA e^{t/s}$

d) $I_3(0) = 0.1mA + 0.33mA - 0.33mA = 0.1mA$

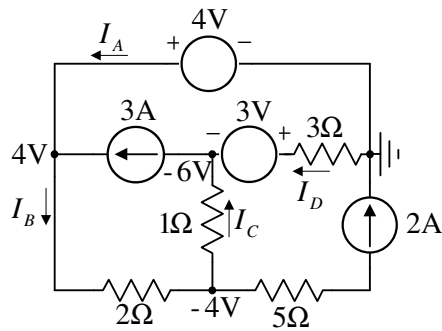
e)



$V_T(t) = V_G / 2 + RI_{G1} / 2 - RI_{G2}$ $R_T = R + R \parallel R = R + R / 2 = 3R / 2$

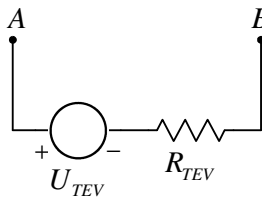
f) $I_p(0) = V_T(0) / R_T = V_G(0) / 3R + \underbrace{I_{G1}(0) / 3 - 2I_{G2}(0) / 3}_{I_{G2}(0) = -I_{G1}(0) \Rightarrow 3I_{G1}(0) / 3} = 0.1mA + 1mA = 1.1mA$

3. a) Traženi potencijali su prikazani na sledećoj slici:

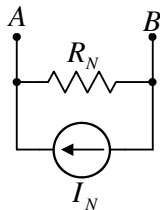


b) $I_A = 1A$, $I_B = 4A$, $I_C = 2A$, $I_D = 1A$, $P_{2\Omega} = 28W$, $P_{3\Omega} = 30W$, $P_{4V} = 4W$, $P_{3V} = -3W$.

4. a) $U_{TEV} = 8V$; $R_{TEV} = 6\Omega$.



b) $I_N = \frac{4}{3}A$; $R_N = 6\Omega$.



c) $P_{2\Omega} = 2W$