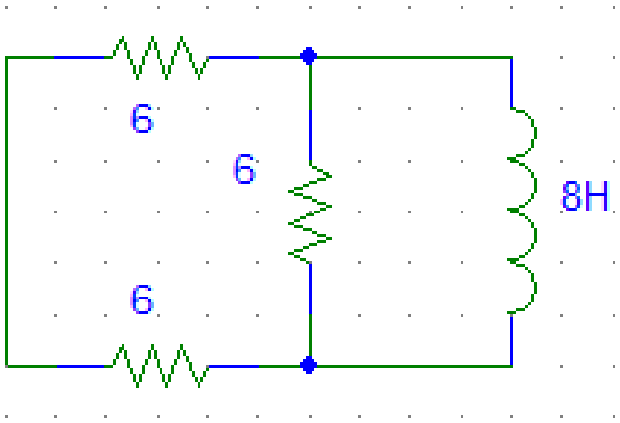
Zaman sabiti $\tau = L/R_{eş}$ $R_{eş}$ => (2. durumda selften görülen eşdeğer direnç, gerilim kaynağı kısa devre, akım kaynağı varsa açık devre yapılarak bulunur.)



$$R_{eş} = \frac{6x(6+6)}{6+(6+6)} = 4\Omega$$

$$\tau = \frac{L}{Reş} = \frac{8}{4} = 2$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$$

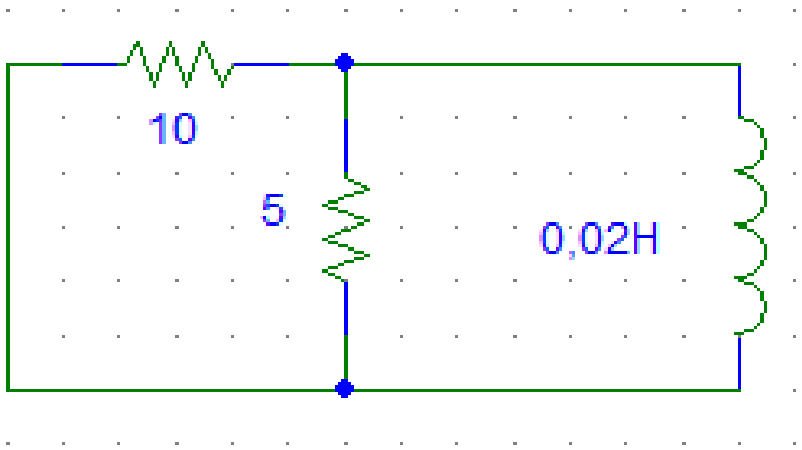
$$\frac{1}{6+6} + \frac{1}{6} + \frac{1}{8.r} = 0$$

$$\frac{1}{\frac{12}{6.r}} + \frac{1}{\frac{6}{12.r}} + \frac{1}{\frac{8.r}{9}} = 0$$

$$6.r + 12.r + 9 = 0$$

$$18.r + 9 = 0$$

$$r = -\frac{1}{2}$$



$R_{eş} = \frac{10x5}{10+5} = \frac{50}{15}\,\Omega$

$\tau = \frac{L}{Reş} = \frac{0,02}{\frac{50}{15}} = \frac{0.3}{50} = \frac{1}{166,66}$

$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$

$\frac{1}{10} + \frac{1}{5} + \frac{1}{0,02.r} = 0$

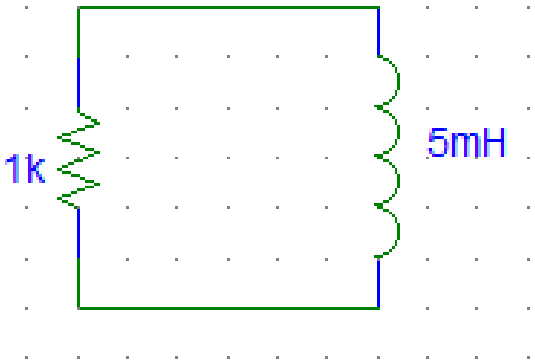
$\frac{1}{10} + \frac{1}{5} + \frac{1}{0.02.r} = 0$
$5.r \quad 10.r \quad 2500$

$5.r + 10.r + 2500 = 0$

$15.r + 2500 = 0$

$r = -\frac{2500}{15} = -166,66$

$\tau = \frac{L}{Reş} = \frac{0,02}{\frac{50}{15}} = \frac{0.3}{50} = \frac{1}{166,66}$



$R_{eş} = 1000\Omega$

$$\tau = \frac{L}{Reş} = \frac{5mH}{1000} = \frac{1}{2x10^5}$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$$

$$\frac{1}{1000} + \frac{1}{0{,}005.r} = 0$$

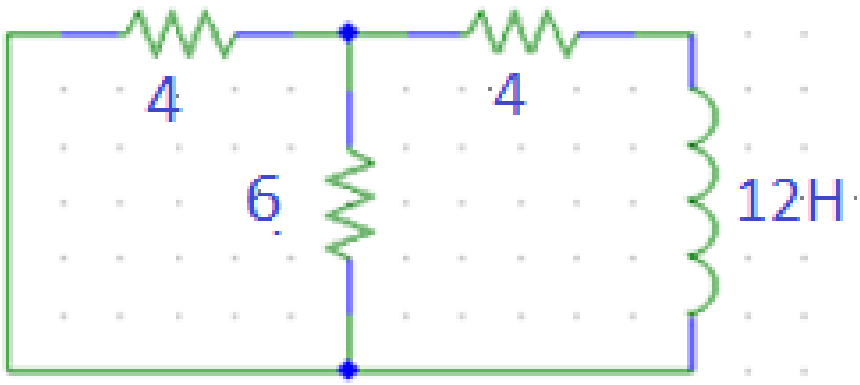
$$\frac{\frac{1}{1000}}{0{,}005.r} + \frac{\frac{1}{0{,}005.r}}{1000} = 0$$

$$5.r + 10.r + 2500 = 0$$

$$0{,}005.r + 1000 = 0$$

$$r = -\frac{1000}{0{,}005} = -200000 = -2x10^5$$

$$\tau = \frac{L}{Reş} = \frac{5mH}{1000} = \frac{1}{2x10^5}$$



$R_{eş} = \frac{4x6}{4+6} + 4 = 6{,}4\Omega$

$\tau = \frac{L}{Reş} = \frac{12}{6{,}4}$

$r = -\frac{1}{\tau}$ $\tau = -\frac{1}{r}$

$\frac{1}{4} + \frac{1}{6} + \frac{1}{4+12.r} = 0$

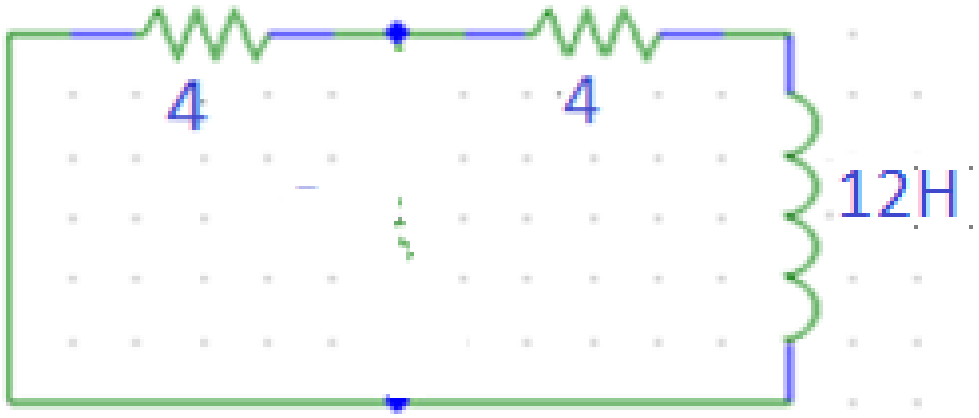
$\frac{1}{\frac{4}{3(4+12.r)}} + \frac{1}{\frac{6}{2(4+12.r)}} + \frac{1}{\frac{4+12.r}{12}} = 0$

$12 + 36.r + 8 + 24.r + 12 = 0$

$60.r + 32 = 0$

$r = -\frac{32}{60} = -\frac{6{,}4}{12}$

$\tau = \frac{L}{Reş} = \frac{12}{6{,}4}$



$R_{eş} = 4 + 4 = 8\Omega$

$\tau = \frac{L}{Reş} = \frac{12}{8}$

$r = -\frac{1}{\tau}$ $\tau = -\frac{1}{r}$

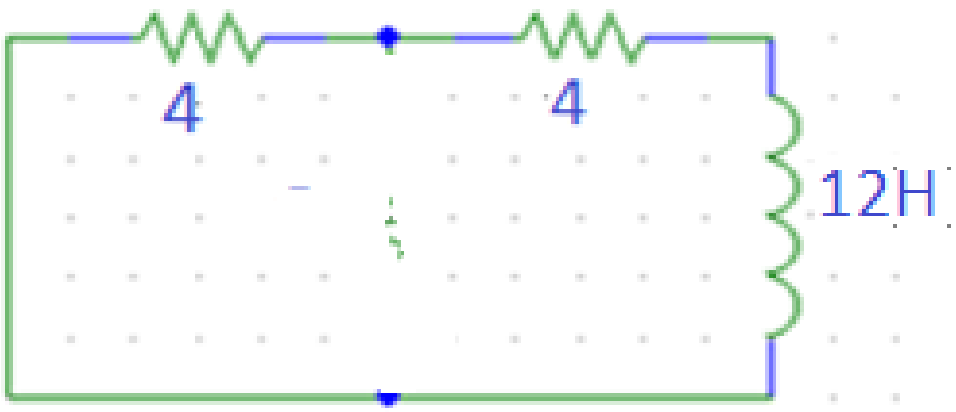
$\frac{1}{4+4} + \frac{1}{12.r} = 0$

$\frac{1}{\frac{8}{12.r}} + \frac{1}{\frac{12r}{8}} = 0$

$12.r + 8 = 0$

$r = -\frac{8}{12}$

$\tau = \frac{L}{Reş} = \frac{12}{8}$



$R_{eş} = 4 + 4 = 8\Omega$

$$\tau = \frac{L}{Reş} = \frac{12}{8}$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$$

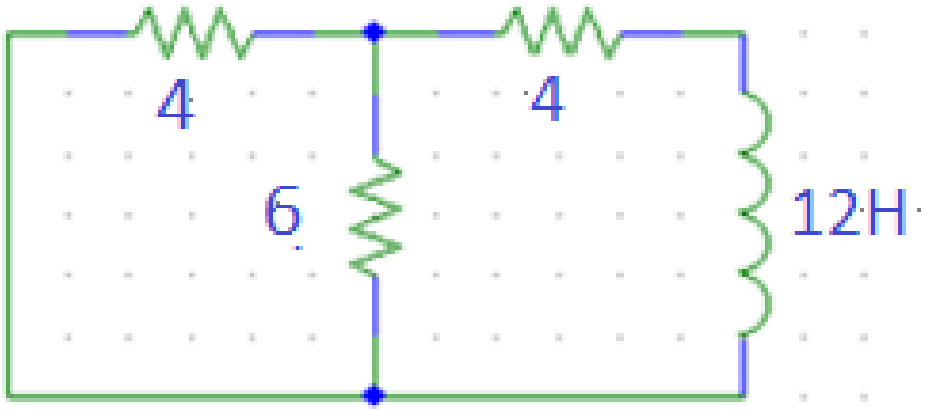
$$\frac{1}{4+4} + \frac{1}{12.r} = 0$$

$$\frac{\frac{1}{8}}{12.r} + \frac{1}{\frac{12.r}{8}} = 0$$

$$12.r + 8 = 0$$

$$r = -\frac{8}{12}$$

$$\tau = \frac{L}{Reş} = \frac{12}{8}$$



$R_{eş} = \frac{4x6}{4+6} + 4 = 6{,}4\Omega$

$\tau = \frac{L}{Reş} = \frac{12}{6{,}4}$

$r = -\frac{1}{\tau}$ $\tau = -\frac{1}{r}$

$\frac{1}{4} + \frac{1}{6} + \frac{1}{4+12.r} = 0$

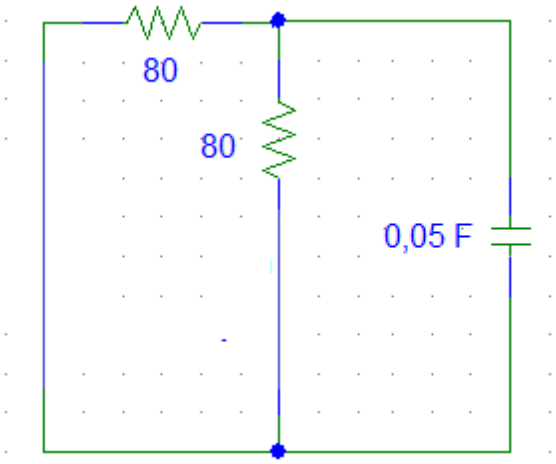
$\frac{1}{\frac{4}{3(4+12.r)}} + \frac{1}{\frac{6}{2(4+12.r)}} + \frac{1}{\frac{4+12.r}{12}} = 0$

$12 + 36.r + 8 + 24.r + 12 = 0$

$60.r + 32 = 0$

$r = -\frac{32}{60} = -\frac{6{,}4}{12}$

$\tau = \frac{L}{Reş} = \frac{12}{6{,}4}$



$$R_{eş} = \frac{80x80}{80+80} = 40\Omega$$

$$\tau = R_{eş}xC = 40x0{,}05 = 2$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$$

$$\frac{1}{80} + \frac{1}{80} + \frac{1}{\frac{1}{0{,}05.r}} = 0$$

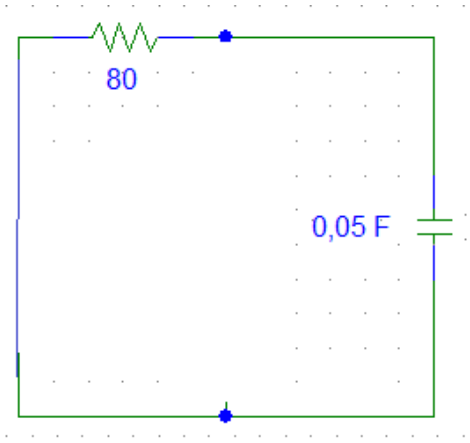
$$\frac{\frac{1}{80}}{1} + \frac{\frac{1}{80}}{1} + \frac{0{,}05.r}{\frac{1}{80}} = 0$$

$$1 + 1 + 0{,}05.r = 0$$

$$2 + 4.r = 0$$

$$r = -\frac{2}{4} = -\frac{1}{2}$$

$$\tau = R_{eş}xC = 40x0{,}05 = 2$$



$R_{eş} = 80\Omega$

$\tau = R_{eş} x C = 80x0{,}05 = 4$

$r = -\frac{1}{\tau}$ $\tau = -\frac{1}{r}$

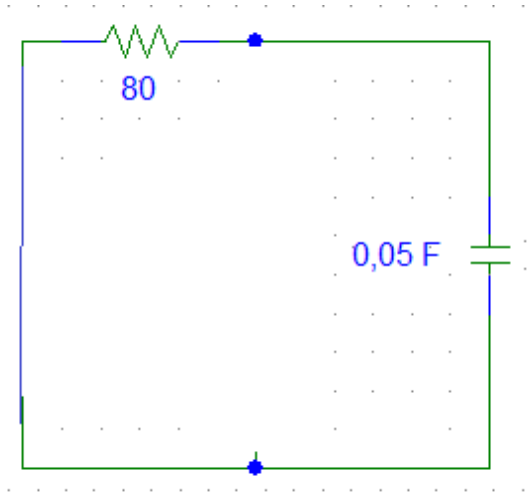
$\frac{1}{80} + \frac{1}{\frac{1}{0{,}05.r}} = 0$

$\frac{\frac{1}{80}}{1} + \frac{0{,}05.r}{\frac{1}{80}} = 0$

$1 + 4.r = 0$

$r = -\frac{1}{4}$

$\tau = R_{eş} x C = 80x0{,}05 = 4$



$R_{eş} = 80\Omega$

$\tau = R_{eş} x C = 80x0{,}05 = 4$

$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$

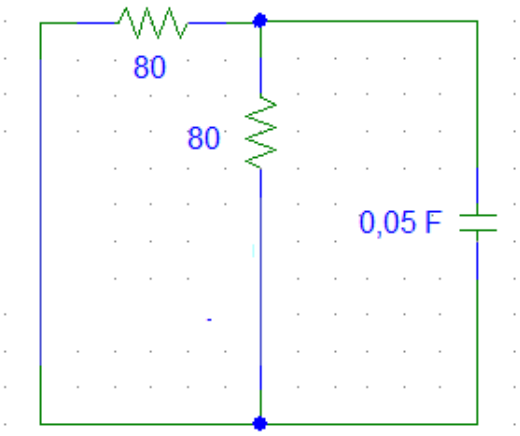
$\frac{1}{80} + \frac{1}{\frac{1}{0{,}05.r}} = 0$

$\frac{\frac{1}{80}}{1} + \frac{0{,}05.r}{\frac{1}{80}} = 0$

$1 + 4.r = 0$

$r = -\frac{1}{4}$

$\tau = R_{eş} x C = 80x0{,}05 = 4$



$$R_{eş} = \frac{80x80}{80+80} = 40\Omega$$

$$\tau = R_{eş}xC = 40x0{,}05 = 2$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$$

$$\frac{1}{80} + \frac{1}{80} + \frac{1}{\frac{1}{0{,}05.r}} = 0$$

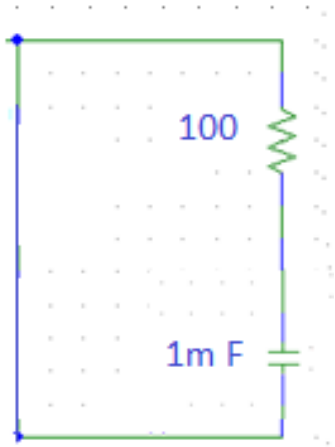
$$\frac{\frac{1}{80}}{1} + \frac{\frac{1}{80}}{1} + \frac{0{,}05.r}{\frac{1}{80}} = 0$$

$$1 + 1 + 0{,}05.r = 0$$

$$2 + 4.r = 0$$

$$r = -\frac{2}{4} = -\frac{1}{2}$$

$$\tau = R_{eş}xC = 40x0{,}05 = 2$$



$R_{eş} = 100\Omega$

$\tau = R_{eş} x C = 100x0{,}001 = 0{,}1$

$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$

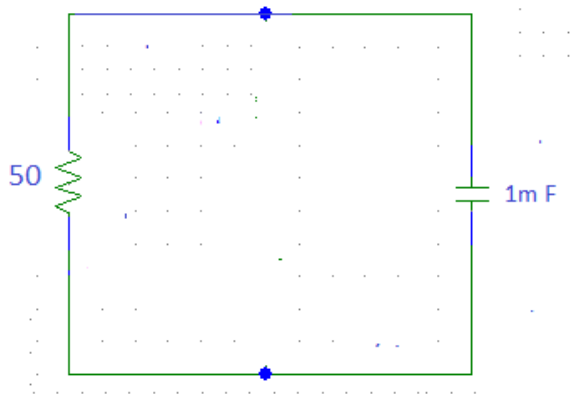
$$\frac{1}{100} + \frac{1}{\frac{1}{0{,}001.r}} = 0$$

$$\frac{\frac{1}{100}}{1} + \frac{0{,}001.r}{\frac{1}{100}} = 0$$

$1 + 0{,}1.r = 0$

$r = -\frac{1}{0{,}1}$

$\tau = R_{eş} x C = 100x0{,}001 = 0{,}1$



$R_{eş} = 50\Omega$

$\tau = R_{eş} x C = 50x0{,}001 = 0{,}05$

$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$

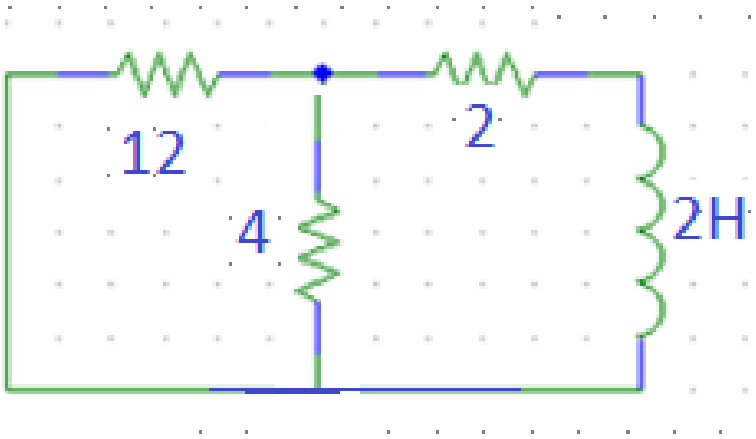
$\frac{1}{50} + \frac{1}{\frac{1}{0{,}001.r}} = 0$

$\frac{\frac{1}{50}}{1} + \frac{0{,}001.r}{\frac{1}{50}} = 0$

$1 + 0{,}05.r = 0$

$r = -\frac{1}{0{,}05}$

$\tau = R_{eş} x C = 50x0{,}001 = 0{,}05$



$R_{eş} = \frac{12x4}{12+4} + 2 = 5\Omega$

$\tau = \frac{L}{Reş} = \frac{2}{5}$

$r = -\frac{1}{\tau}$ $\tau = -\frac{1}{r}$

$\frac{1}{12} + \frac{1}{4} + \frac{1}{2+2.r} = 0$

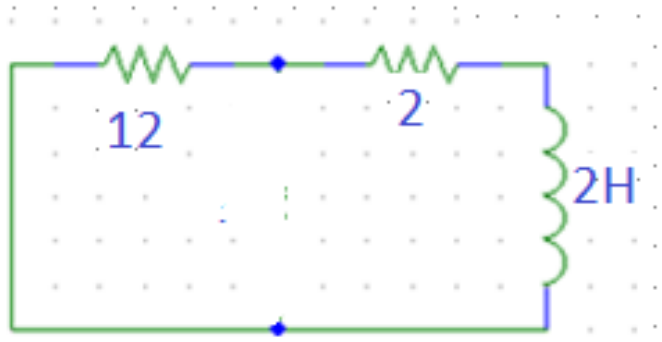
$\frac{\frac{1}{12}}{(2+2.r)} + \frac{\frac{1}{4}}{3(2+2.r)} + \frac{\frac{1}{2+2.r}}{12} = 0$

$2 + 2.r + 6 + 6.r + 12 = 0$

$8.r + 20 = 0$

$r = -\frac{20}{8} = -\frac{5}{2}$

$\tau = \frac{L}{Reş} = \frac{2}{5}$



$R_{\text{eş}} = 12 + 2 = 6\Omega$

$$\tau = \frac{\text{L}}{\text{Reş}} = \frac{2}{14}$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{\text{r}}$$

$$\frac{1}{12+2} + \frac{1}{2.r} = 0$$

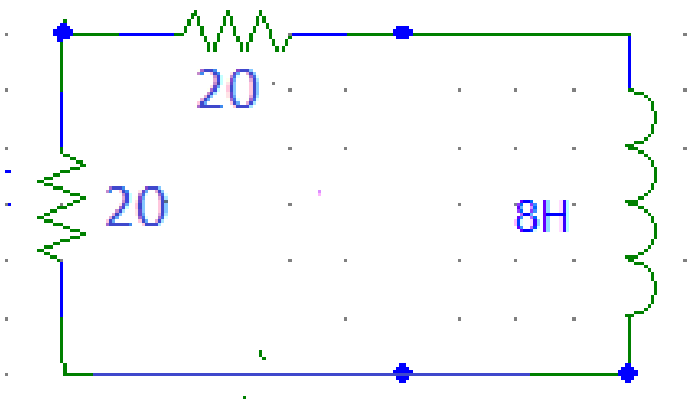
$$\frac{1}{14} + \frac{1}{2.r} = 0$$

$$\frac{1}{2.r} \quad \frac{1}{14}$$

$$2.r + 14 = 0$$

$$r = -\frac{14}{2}$$

$$\tau = \frac{\text{L}}{\text{Reş}} = \frac{2}{14}$$



$R_{\text{eş}} = 20 + 20 = 40\Omega$

$$\tau = \frac{\text{L}}{\text{Reş}} = \frac{8}{40} = \frac{1}{5}$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{\text{r}}$$

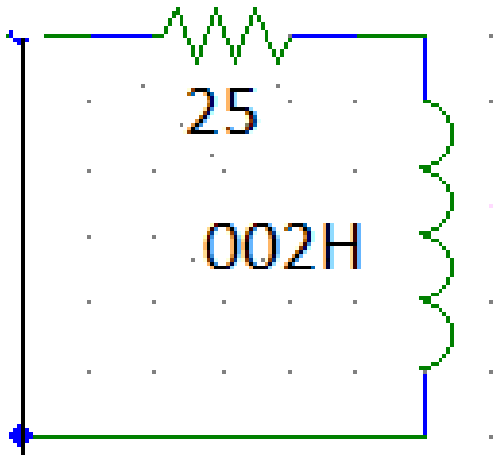
$$\frac{1}{20+20} + \frac{1}{8.r} = 0$$

$$\frac{\frac{1}{40}}{r} + \frac{1}{\frac{8.r}{5}} = 0$$

$$r + 5 = 0$$

$$r = -5$$

$$\tau = \frac{\text{L}}{\text{Reş}} = \frac{8}{40} = \frac{1}{5}$$



$R_{eş} = 25\Omega$

$$\tau = \frac{L}{Reş} = \frac{0,02}{25} = \frac{1}{1250}$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$$

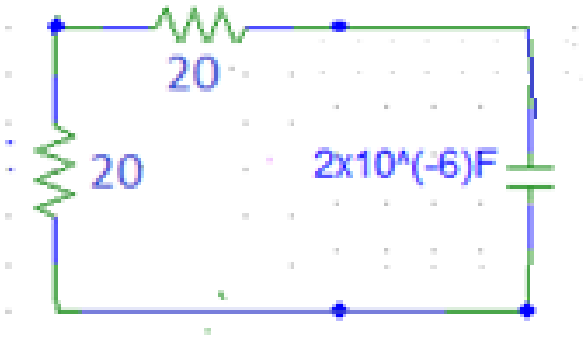
$$\frac{1}{25} + \frac{1}{0,02.r} = 0$$

$$\frac{\frac{1}{25}}{r} + \frac{1}{\frac{0,02.r}{1250}} = 0$$

$$r + 1250 = 0$$

$$r = -1250$$

$$\tau = \frac{L}{Reş} = \frac{0,02}{25} = \frac{1}{1250}$$



$R_{eş} = 20 + 20 = 40\Omega$

$\tau = R_{eş} x C = 40x2x10^{-6} = 80x10^{-6}$

$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$

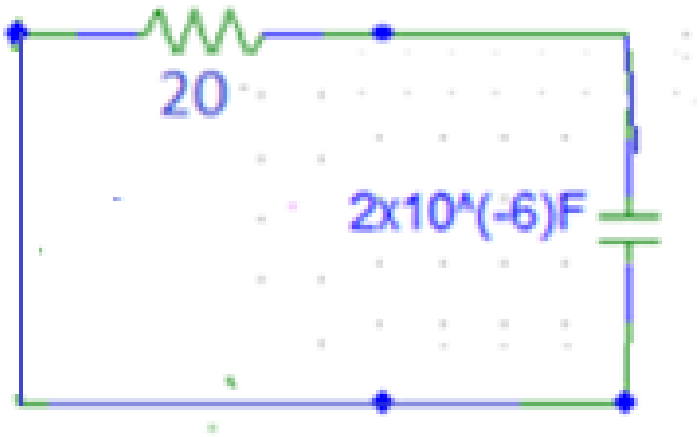
$\frac{1}{20+20} + \frac{1}{\frac{1}{0,000002.r}} = 0$

$\frac{\frac{1}{40}}{1} + \frac{0,000002.r}{\frac{1}{40}} = 0$

$1 + 0,000080.r = 0$

$r = -\frac{1}{0,000080}$

$\tau = R_{eş} x C = 40x2x10^{-6} = 80x10^{-6}$



$R_{\text{eş}} = 20\Omega$

$\tau = R_{\text{eş}} x C = 20x2x10^{-6} = 40x10^{-6}$

$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$

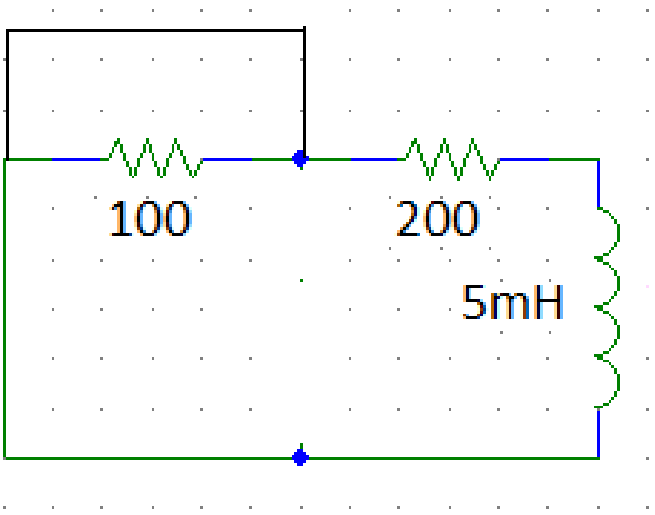
$$\frac{1}{20} + \frac{1}{\frac{1}{0{,}000002.r}} = 0$$

$$\frac{\frac{1}{20}}{1} + \frac{0{,}000002.r}{\frac{1}{20}} = 0$$

$$1 + 0{,}000040.r = 0$$

$$r = -\frac{1}{0{,}000040}$$

$\tau = R_{\text{eş}} x C = 20x2x10^{-6} = 40x10^{-6}$



$R_{\text{eş}} = 200\Omega$

$$\tau = \frac{\text{L}}{\text{Reş}} = \frac{5\text{m}}{200} = \frac{1}{40000}$$

$r = -\frac{1}{\tau}$ $\quad$ $\tau = -\frac{1}{\text{r}}$

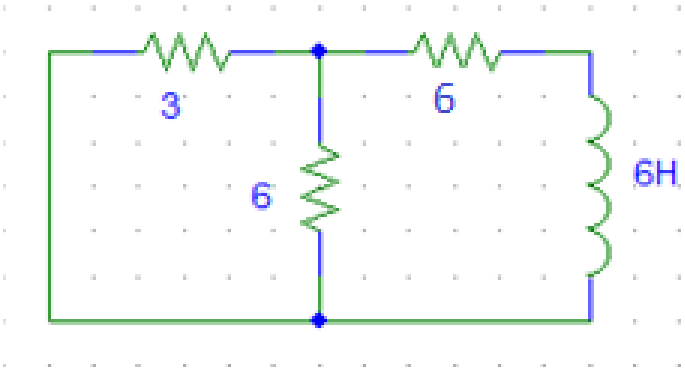
$$\frac{1}{200} + \frac{1}{0{,}005.r} = 0$$

$$\frac{\frac{1}{200}}{\frac{r}{40000}} + \frac{1}{0{,}005.r} = 0$$

$$r + 40000 = 0$$

$$r = -40000$$

$$\tau = \frac{\text{L}}{\text{Reş}} = \frac{5\text{m}}{200} = \frac{1}{40000}$$



$$R_{\text{eş}} = \frac{3x6}{3+6} + 6 = 8\Omega$$

$$\tau = \frac{\text{L}}{\text{Reş}} = \frac{6}{8} = \frac{3}{4}$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{\text{r}}$$

$$\frac{1}{3} + \frac{1}{6} + \frac{1}{6+6.r} = 0$$

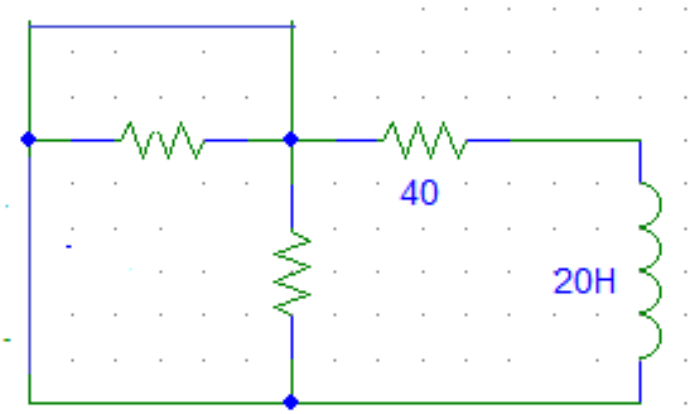
$$\frac{\frac{1}{3}}{2.(6+6.r)} + \frac{\frac{1}{6}}{(6+6.r)} + \frac{\frac{1}{6+6.r}}{6} = 0$$

$$12 + 12.r + 6 + 6.r + 6 = 0$$

$$18.r + 24 = 0$$

$$r = -\frac{24}{18} = -\frac{4}{3}$$

$$\tau = \frac{\text{L}}{\text{Reş}} = \frac{6}{8} = \frac{3}{4}$$



$R_{\text{eş}} = 40\Omega$ 16 Ohm ve 10 Ohm kısa devre

$$\tau = \frac{\text{L}}{\text{Reş}} = \frac{20}{40} = \frac{1}{2}$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{\text{r}}$$

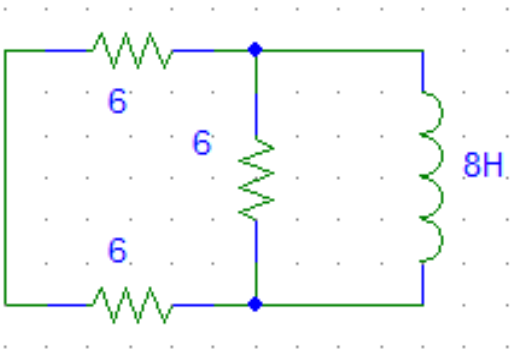
$$\frac{1}{40} + \frac{1}{20.r} = 0$$

$$\frac{\frac{1}{40}}{\frac{2.r}{4}} + + \frac{1}{20.r} = 0$$

$$2.r + 4 = 0$$

$$r = -\frac{4}{2} = -\frac{1}{2}$$

$$\tau = \frac{\text{L}}{\text{Reş}} = \frac{20}{40} = \frac{1}{2}$$



$$R_{\text{eş}} = \frac{6x(6+6)}{6+(6+6)} = 4\Omega$$

$$\tau = \frac{\text{L}}{\text{Reş}} = \frac{8}{4} = 2$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{\text{r}}$$

$$\frac{1}{6+6} + \frac{1}{6} + \frac{1}{8.r} = 0$$

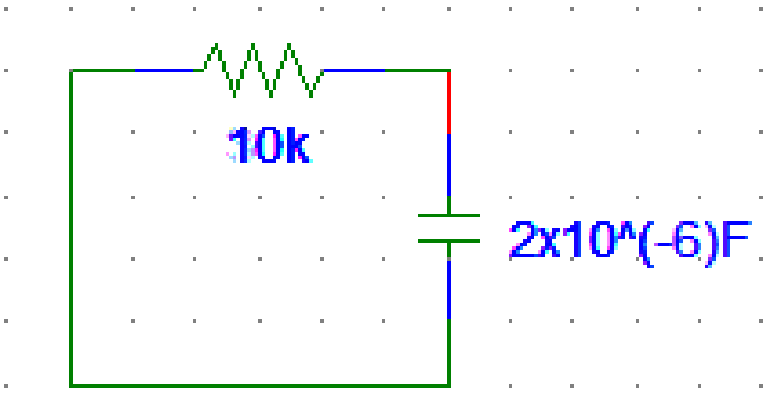
$$\frac{1}{\frac{12}{6.r}} + \frac{1}{\frac{6}{12.r}} + \frac{1}{\frac{8.r}{9}} = 0$$

$$6.r + 12.r + 9 = 0$$

$$18.r + 9 = 0$$

$$r = -\frac{1}{2}$$

$$\tau = \frac{\text{L}}{\text{Reş}} = \frac{8}{4} = 2$$



$R_{eş} = 10^4\Omega$

$\tau = R_{eş}xC = 10.10^3x2x10^{-6} = 0{,}02$

$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$

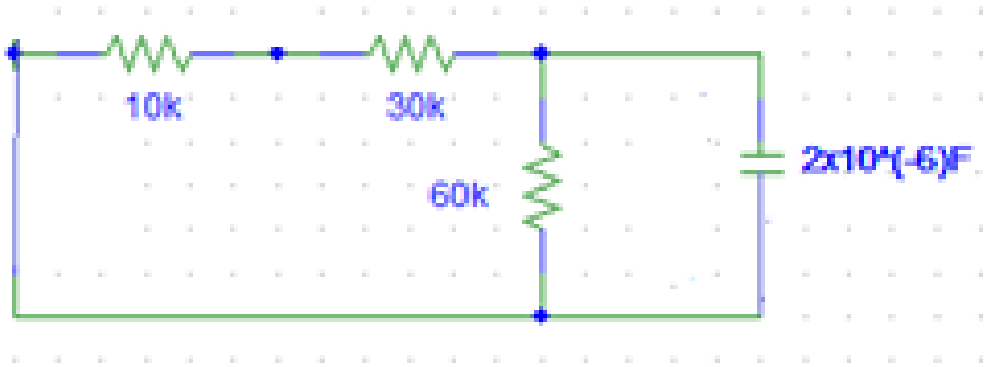
$$\frac{1}{10000} + \frac{1}{\frac{1}{0{,}000002.r}} = 0$$

$$\frac{\frac{1}{10000}}{1} + \frac{0{,}000002.r}{\frac{1}{10000}} = 0$$

$1 + 0{,}02.r = 0$

$r = -\frac{1}{0{,}02}$

$\tau = R_{eş}xC = 10.10^3x2x10^{-6} = 0{,}02$



$$R_{eş} = \frac{60.10^3 x(10.10^3+30.10^3)}{60.10^3+(10.10^3+30.10^3)} = 24.10^3\Omega$$

$$\tau = R_{eş} xC = 24.10^3 x2x10^{-6} = 48.1010^{-3} = 0{,}048$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$$

$$\frac{1}{10000+30000} + \frac{1}{60000} + \frac{1}{\frac{1}{0{,}000002.r}} = 0$$

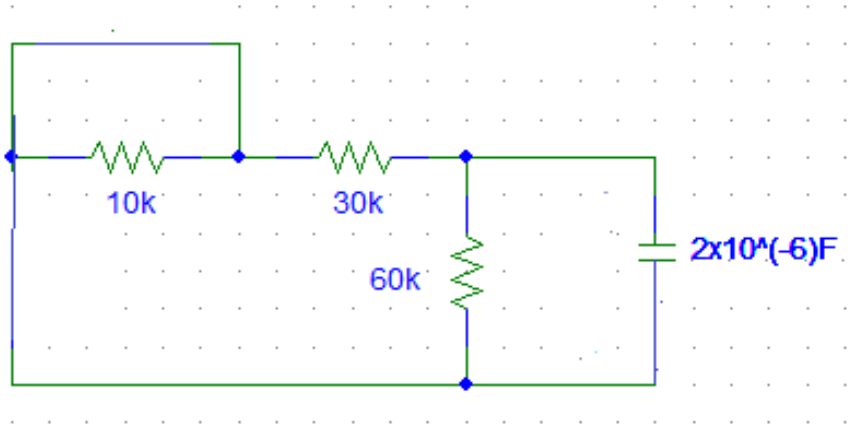
$$\frac{1}{\frac{40000}{3}} + \frac{1}{\frac{60000}{2}} + \frac{0{,}000002.r}{\frac{1}{120000}} = 0$$

$$3 + 2 + 0{,}24.r = 0$$

$$5 + 0{,}24.r = 0$$

$$r = -\frac{5}{0{,}24} = -\frac{1}{0{,}048}$$

$$\tau = R_{eş} xC = 24.10^3 x2x10^{-6} = 0{,}048$$



$$R_{eş} = \frac{60.10^3 x 30.10^3}{60.10^3 + 30.10^3} = 20.10^3 \Omega$$

$$\tau = R_{eş} x C = 20.10^3 x 2 x 10^{-6} = 40.1010^{-3} = 0{,}04$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$$

$$\frac{1}{30000} + \frac{1}{60000} + \frac{1}{\frac{1}{0{,}000002.r}} = 0$$

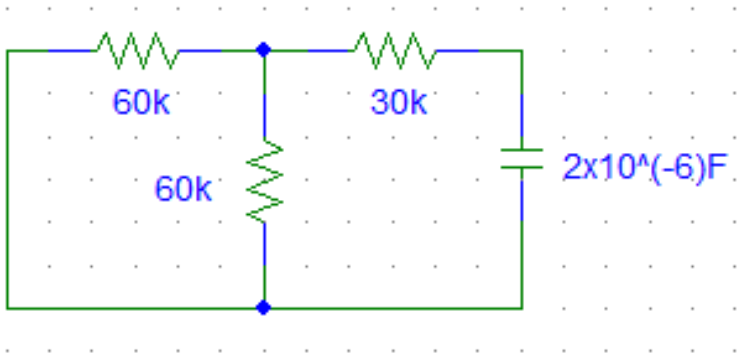
$$\frac{1}{\frac{30000}{4}} + \frac{1}{\frac{60000}{2}} + \frac{0{,}000002.r}{\frac{1}{120000}} = 0$$

$$4 + 2 + 0{,}24.r = 0$$

$$6 + 0{,}24.r = 0$$

$$r = -\frac{6}{0{,}24} = -\frac{1}{0{,}04}$$

$$\tau = R_{eş} x C = 20.10^3 x 2 x 10^{-6} = 0{,}04$$



$$R_{eş} = \frac{60.10^3 x 60.10^3}{60.10^3 + 60.10^3} + 30.10^3 = 60.10^3 \Omega$$

$$\tau = R_{eş} x C = 60.10^3 x 2 x 10^{-6} = 0{,}12$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$$

$$\frac{1}{60000} + \frac{1}{60000} + \frac{1}{30000 + \frac{1}{0{,}000002.r}} = 0$$

$$\frac{2}{60000} + \frac{0{,}000002}{0{,}06.r + 1} = 0$$

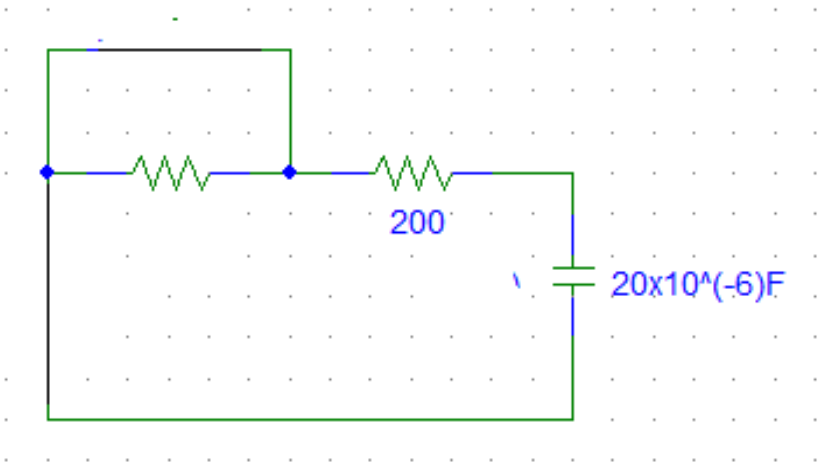
$$\frac{\frac{2}{60000}}{0{,}06.r + 1} + \frac{0{,}000002.r}{\frac{0{,}06r + 1}{60000}} = 0$$

$$0{,}12.r + 2 + 0{,}12.r = 0$$

$$2 + 0{,}24.r = 0$$

$$r = -\frac{2}{0{,}24} = -\frac{1}{0{,}12}$$

$$\tau = R_{eş} x C = 60.10^3 x 2 x 10^{-6} = 0{,}12$$



$R_{eş} = 200\Omega$

$\tau = R_{eş} x C = 200\text{x}20x10^{-6} = 0{,}004$

$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$

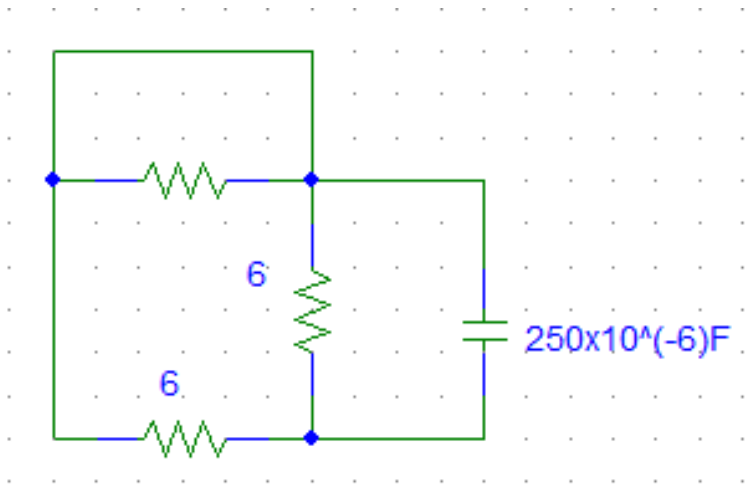
$$\frac{1}{200} + \frac{1}{\frac{1}{0{,}00002.r}} = 0$$

$$\frac{\frac{1}{200}}{1} + \frac{0{,}00002.r}{\frac{1}{200}} = 0$$

$1 + 0{,}004.r = 0$

$$r = -\frac{1}{0{,}004}$$

$\tau = R_{eş} x C = 200\text{x}20x10^{-6} = 0{,}004$



$$R_{eş} = \frac{6x6}{6+6} = 3\Omega$$

$$\tau = R_{eş}xC = 3x250x10^{-6} = 0{,}00075$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{r}$$

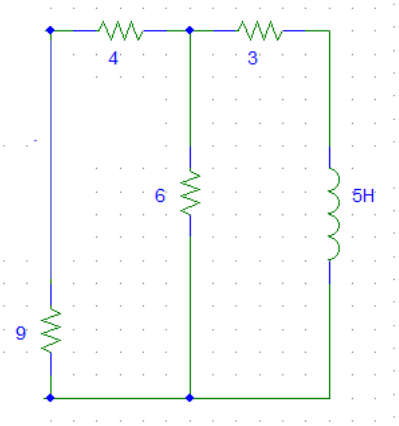
$$\frac{1}{6} + \frac{1}{6} + \frac{1}{\frac{1}{0{,}000350.r}} = 0$$

$$\frac{\frac{1}{3}}{1} + \frac{0{,}000250.r}{\frac{1}{3}} = 0$$

$$1 + 0.00075.r = 0$$

$$r = -\frac{1}{0{,}00075}$$

$$\tau = R_{eş}xC = 3x250x10^{-6} = 0{,}00075$$



$$R_{\text{eş}} = \frac{(9+4)x6}{(9+4)+6} + 3 = 7{,}1\Omega$$

$$\tau = \frac{\text{L}}{\text{Reş}} = \frac{5}{7{,}1} = \frac{5}{7{,}1}$$

$$r = -\frac{1}{\tau} \qquad \tau = -\frac{1}{\text{r}}$$

$$\frac{1}{4+9} + \frac{1}{6} + \frac{1}{3+5.r} = 0$$

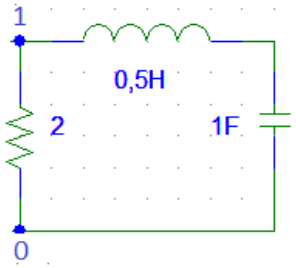
$$\frac{1}{\frac{13}{6.(3+5.r)}} + \frac{1}{\frac{6}{13.(3+5.r)}} + \frac{1}{\frac{3+5.r}{78}} = 0$$

$$18 + 30.r + 39 + 65.r + 78 = 0$$

$$95.r + 135 = 0$$

$$r = -1{,}42$$

$$\tau = \frac{\text{L}}{\text{Reş}} = \frac{5}{7{,}1} = \frac{5}{7{,}1}$$



2. durum $\frac{1}{2}+\frac{1}{0,5.r+\frac{1}{r.1}}=0$

$\frac{1}{2}+\frac{r.1}{0,5.r^2+1}=0$ $\frac{\frac{1}{2}}{0,5.r^2+1}+\frac{r.1}{2}=0$

$0,5.r^2+1+2.r=0$ $0,5.r^2+2.r+1=0$

$r_1,r_2=\frac{-b\mp\sqrt{b^2-4.a.c}}{2.a}$

$r_1,r_2=\frac{-2\mp\sqrt{2^2-4.0,5.1}}{2.0,5}=\frac{-2\mp\sqrt{4-2}}{1}=-2\mp\sqrt{2}$

$r_1=-3,414$ $r_2=-0,586$

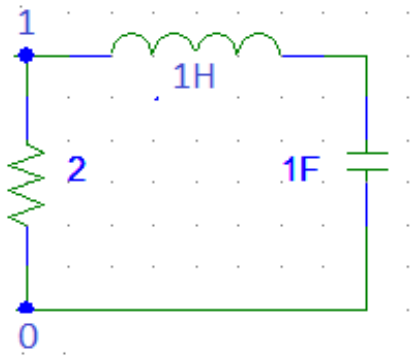
$(r_1+3,414).(r_2+0,586)=0$

$I_L(t)=A.e^{r.t}+B.e^{r.t}+I_L(\infty)$

$I_L(t)=A.e^{-3,414.t}+B.e^{-0,586.t}+0$

$V_c(t)=A.e^{r1.t}+B.t.e^{r2.t}+V_c(\infty)$

$V_c(t)=A.e^{-3,414.t}+B.e^{-0,586.t}+0$



$$\frac{1}{2}+\frac{1}{r.1+\frac{1}{r.1}}=0$$

$$\frac{1}{2}+\frac{r}{r^2+1}=0 \qquad \frac{\frac{1}{2}}{\frac{r^2+1}{2}}+\frac{r.1}{r^2+1}=0$$

$$r^2+1+2.r=0 \qquad r^2+2.r+1=0$$

$$(r+1)^2=0 \quad (r_1+1)(r_2+1)=0$$

$$r_1,r_2=\frac{-b\mp\sqrt{b^2-4.a.c}}{2.a} \qquad r_1,r_2=\frac{-2\mp\sqrt{2^2-4..1}}{2.1}=\frac{-2\mp\sqrt{4-2}}{2}=-1$$

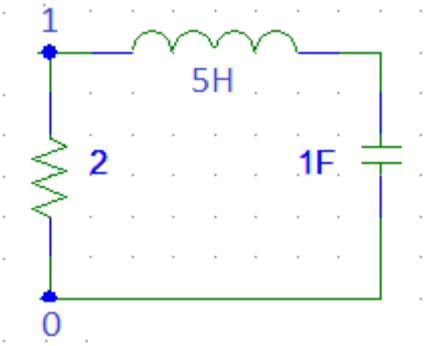
$$(r_1+1)(r_2+1)=0$$

$I_L(t)=A.e^{r1.t}+B.t.e^{r2.t}+I_L(\infty)$ kökler katlı

$$I_L(t)=A.e^{-1.t}+B.t.e^{-1.t}+0$$

$$V_c(t)=A.e^{r1.t}+B.e^{r2.t}+V_c(\infty)$$

$$V_c(t)=A.e^{-1.t}+B.t.e^{-1.t}+0$$



$$\frac{1}{2}+\frac{1}{5.r+\frac{1}{r.1}}=0$$

$$\frac{1}{2}+\frac{r.1}{5.r^2+1}=0 \qquad \frac{1}{\frac{2}{5.r^2+1}}+\frac{r.1}{2}=0$$

$$5.r^2+1+2.r=0 \qquad 5.r^2+2.r+1=0$$

$$r_1,r_2=\frac{-b\mp\sqrt{b^2-4.a.c}}{2.a} \qquad r_1,r_2=\frac{-2\mp\sqrt{2^2-4.5.1}}{2.5}=\frac{-2\mp\sqrt{-16}}{10}=-0{,}2\mp j.0{,}4$$

$$r_1=-0{,}2+j.0{,}4 \qquad r_2=-0{,}2-j.0{,}4$$

$$(r_1+0{,}2-j.0{,}4).(r_1-0{,}2+j.0{,}4)=0$$

$$I_L(t)=e^{-0{,}2.t}(A.Cos0{,}4t+B.Sin0{,}4t)+I_L(\infty)$$

$$I_L(t)=e^{-0{,}2.t}(A.Cos0{,}4t+B.Sin0{,}4t)+0$$

$$V_c(t)=e^{-0{,}2.t}(A.Cos0{,}4t+B.Sin0{,}4t)+V_c(\infty)$$

$$V_c(t)=e^{-0{,}2.t}(A.Cos0{,}4t+B.Sin0{,}4t)+0$$