

3. DOMAĆA ZADAĆA IZ MATEMATIKE 3

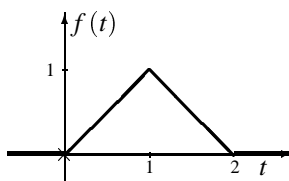
Primjenom Laplaceove transformacije riješi sljedeće diferencijalne jednačbe

1. $y'' - 2y' - 3y = 3te^{2t}$, $y(0) = 1$, $y'(0) = 0$.

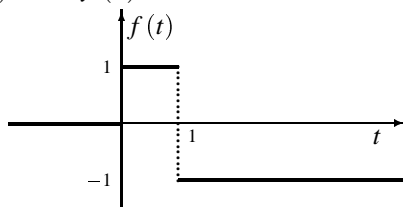
2. $y'' + 4y = 3 \sin 2t$, $y(0) = 2$, $y'(0) = -1$.

3. $y'' + 2y' + 2y = e^t$, $y(0) = 0$, $y'(0) = 0$.

4. $y' + y = f(t)$, $y(0) = 1$.



5. $y'' + y = f(t)$, $y(0) = 0$, $y'(0) = 0$.



6. Primjenom Laplaceove transformacije riješi integralnu jednačbu

$$y(t) = t + 2 \int_0^t \cos(t-u)y(u)du.$$

7. Primjenom Laplaceove transformacije riješi integralnu jednačbu

$$y(t) = t + \frac{1}{6} \int_0^t (t-u)^3 y(u)du.$$

8. Primjenom Laplaceove transformacije riješi integralno-diferencijalnu jednačbu

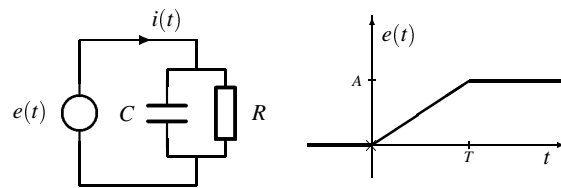
$$y''(t) + 3y'(t) + 2 \int_0^t (t-u)y(u)du = 0; \quad y(0) = 0, \quad y'(0) = 1.$$

9. Riješi sustav diferencijalnih jednačbi

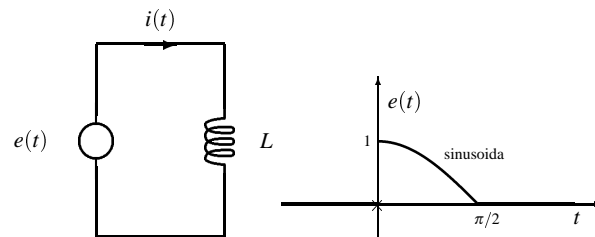
$$\begin{cases} x' + 5x - 2y = e^t, \\ y' - x + 6y = e^{-2t}, \end{cases} \quad x(0) = y(0) = 0.$$

Primjenom Laplaceove transformacije odredi i skiciraj struju $i(t)$ električnog kruga zadanog prema slici ako je priključen zadani napon $e(t)$.

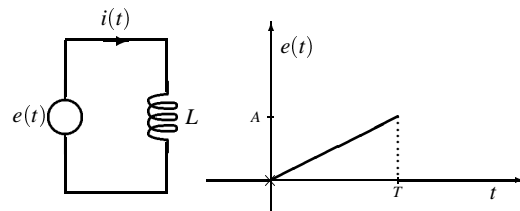
10.



11.



12.



student	zadaci				student	zadaci			
1.	1	5	7	11	2.	2	6	9	12
3.	1	6	7	10	4.	1	6	8	12
5.	2	4	7	10	6.	1	4	9	11
7.	3	4	8	10	8.	1	5	9	12
9.	2	5	8	11	10.	2	4	7	10
11.	2	5	9	11	12.	2	4	9	11
13.	2	6	7	10	14.	3	6	8	12
15.	1	4	9	12	16.	1	6	9	12
17.	2	4	9	11	18.	2	5	9	12
19.	1	5	7	10	20.	2	4	7	10
21.	2	4	7	12	22.	3	6	9	11
23.	3	4	8	10	24.	1	4	9	10
25.	3	4	9	12	26.	2	4	9	10
27.	3	5	8	10	28.	2	5	9	12
29.	2	4	7	10	30.	1	4	7	11
31.	2	5	7	11	32.	3	5	7	12
33.	1	5	7	10	34.	1	4	8	11
35.	1	4	7	10	36.	1	5	9	10
37.	3	5	9	10	38.	1	5	9	12
39.	2	4	8	10	40.	1	6	7	11
41.	3	4	9	11	42.	1	5	9	12
43.	1	5	8	11	44.	2	4	7	11
45.	2	6	7	11	46.	2	5	9	10
47.	3	6	7	10	48.	2	5	7	11
49.	2	4	8	11	50.	1	5	8	11
51.	3	5	7	10	52.	1	6	8	10
53.	1	4	9	11	54.	2	5	8	11
55.	3	5	7	10	56.	2	5	9	11
57.	3	4	9	10	58.	1	6	7	11
59.	1	4	7	10	60.	1	5	9	11
61.	1	6	7	10	62.	3	5	9	12
63.	1	4	9	10	64.	1	5	8	10
65.	3	6	7	10	66.	2	4	9	12
67.	2	5	8	11	68.	1	4	8	11
69.	2	5	7	10	70.	3	4	7	12
71.	1	4	7	11	72.	2	4	8	11
73.	1	4	7	10	74.	1	5	7	11
75.	2	5	9	11	76.	2	6	9	10
77.	1	5	7	10	78.	2	6	9	11
79.	1	6	9	11	80.	2	5	8	10