

Таблиця 2.1

Варіант	v_A	v_B	F_{x_1}	T_{x_2}	Ty_2	l_1	d	h	t_1	t_2	α	f_1	Знайти додатково
	м/с		н			м		с		град (°)			
1.	0.0	–	$2t+4\sin 2t$	$0.4 \dot{x}_2$	$0.4y_2$	–	5	–	1.0	–	0	0.1	h, t_2, v_B
2.	0.0	–	$8x_1$	$2\cos 4t$	$2 \dot{y}_2$	–	–	–	1.0	–	30	0.1	v_B
3.	0.0	–	$4\cos t$	$2x_2$	$2 \dot{y}_2+2$	–	–	–	1.0	1.0	45	0.1	d, v_B
4.	2.5	–	$10e^{2t}$	$10 \dot{x}_2^{-2}$	$10y_2$	5.0	–	–	–	–	0	0.0	t_1, v_B
5.	0.0	–	$2t-t^3$	$-4(x-2 \dot{x}_2)$	0	–	–	10	1.0	–	30	0.1	t_2, v_B
6.	0.0	–	$-8x_1+8 \dot{x}_1$	0	$30e^{-t}$	–	4.78	–	0.5	–	30	0.1	h, t_2, v_B
7.	1.0	–	$10(-3+t^2)$	$-8x_2$	$-3 \dot{y}_2$	–	–	–	3.0	–	0	0.0	h, d, t_2, v_B
8.	1.0	7.4	$4e^{2t}$	$-2 \dot{x}_2^3$	0	–	–	4.905	–	–	0	0.0	d, t_2, t_1
9.	0.0	–	$-18 \dot{x}_1-12x_1$	$6 \dot{x}_2^2$	$2-2\sin t$	–	1.0	–	1.0	–	60	0.2	t_2, v_B
10.	0.0	–	$4(t^2-t^3)$	$-8x_2-4 \dot{x}_2$	$-8y_2$	–	2.0	–	1.0	–	30	0.1	h, t_2, v_B
11.	2.0	–	$-4 \dot{x}_1$	$2x_2$	$-4e^{-2t}$	0.865	–	–	–	–	0	0.0	t_1, v_B
12.	0.0	–	$4e^t$	$-2 \dot{x}_2^2$	$2\cos t$	–	3.0	–	2.0	–	-30	0.1	h, t_2, v_B
13.	2.62	7.87	16	$8e^{-2t}$	$4(\dot{y}_2-y_2)$	–	–	–	–	0.5	-30	0.1	d, h, t_2, l_1
14.	0.0	6.0	$24t$	$8\cos 2t$	$6(y_2+\dot{y}_2)$	–	1.0	–	–	–	-45	0.1	t_1
15.	0.0	–	$-8x_1$	$4 \dot{x}_2-6x_2$	4.0	1.015	–	7.015	–	–	30	0.1	d, v_B, t_2, t_1

Продовження таблиці 2.1

Варіант	v_A	v_B	F_{x_1}	T_{x_2}	Ty_2	l_1	d	h	t_1	t_2	α	f_1	Знайти додатково
	м/с		н			м			с		град (°)		
16	0.0	3.0	$6t$	$-(20x_2-4\dot{x}_2)$	$4(\cos t-4.905)$	-	-	2	-	-	0	0.1	t_2, t_1
17	3.03	-	$-4\dot{x}_1$	$-2x_2$	$2(2\dot{y}_2+y_2-9.81)$	-	1.87	-	1.0	-	30	0.1	t_2, v_B
18	2.0	-	$4\dot{x}_1-2x_1+7.63$	$8+8x_2$	-5.81	-	-	2.0	1.0	-	-45	0.1	t_2, v_B
19	1.0	-	$-4e^{-2t}+0.2g$	$-2\dot{x}_2^2$	$-2(y_2+7.81)$	0.5	-	2.0	-	-	0	0.1	t_1, t_2, v_B
20	1.75	5.25	$4\dot{x}_1-2x_1+8$	$8+8x_2$	-11.62	-	-	3.0	-	-	-30	0.1	t_1, t_2, l_1
21	1.0	5.0	$4(1+e^{2t})$	$-2.0\dot{x}_2$	$2y_2$	-	1.5	-	-	-	0	0.204	t_1, t_2, l_1, v_C
22	1.0	-	$-8\dot{x}_1^2+0.2g$	$-0.2\dot{x}_2^3$	$-2(\sin t+g)$	-	-	-	0.25	-	0	0.1	v_B
23	1.0	-	$-\dot{x}_1^3-8.12$	2.0	$4\dot{y}_2-2y_2-2g$	-	2.0	-	0.5	-	30	0.1	v_C, t_2, v_B
24	1.0	5.0	$4t$	$-2\dot{x}_2$	$-4(y_2+\dot{y}_2)$	-	2.74	-	-	-	-30	0.1	t_1, t_2
25	2.0	-	$-12e^{-3t}+1.962$	$-6\dot{x}_2-2x_2$	-7.62	-	-	3	$\frac{1}{3}$	-	0	0.1	t_2, v_B
26	0.0	2.0	$8\cos 2t+11.5$	$2-4x_2$	$-4e^{-2t}$	-	-	-	-	1.0	-30	0.1	h, t_1, l_1, d
27	1.0	-	$2(\dot{x}_1^2-8)$	$-4e^{-2t}$	$-(8y_2+2g)$	0.693	-	0.866	-	-	60	0.1	t_1, t_2, v_B
28	0.0	-	$4x_1$	$-4\sin 2t$	$-0.4\dot{y}_2-20.02$	-	-	-	1.0	-	0	0.1	v_B
29	0.0	4.0	23.26	$-6\dot{x}_2+3.5x_2$	$-2\dot{y}_2^2-2g$	-	-	2.0	-	-	-45	0.1	t_1, t_2, l_1
30	1.0	-	$0.2\dot{x}_1-8.12$	4.0	$-4\cos 2t-0.2g$	3.57	2.0	-	-	-	30	0.1	t_1, t_2, v_B

Таблица відповідей

Варіант	$x_1(t_1)$	$x_2(t_2)$	$y_2(t_2)$	v_B	t_1	t_2	h	d	l_1
	М			М/с		с		М	
1.	$1/6t^3-0.4905t^2+t-0.5\sin 2t$	$4.675(e^{0.2t}-1)$	$49.05(1-\cos 0.447t)$	0.935	-	3.64	51.8	-	-
2.	$1.015ch 2t-1.015$	$0.0625(1-\cos 4t)+6.374t$	$13.49(e^t-1)-9.81t$	7.36	-	-	-	-	-
3.	$3.12t^2+(1-\cos t)$	$2.8(e^t-e^{-t})=5.6sh t$	$16.41(e^t-1)-10.81t$	7.92	-	-	-	6.58	-
4.	$1.25(e^{2t}-1)$	$2.1\sqrt{(t+15.32)^3}-125.92$	$e^{2.24t}+e^{-2.24t}-2=2(ch 2.24t-1)$	12.38	0.8	-	-	-	-
5.	$2.03t^2+0.166t^3-0.05t^5$	$1.32(e^{3.41t}-e^{0.59t})$	$4.95t^2+2.15t$	4.31	-	1.215	-	-	-
6.	$e^{2t}(2.03t-1.015)$	$4.78t$	$15e^{-2t}+4.905t^2+17.76t-15$	5.52	-	1.0	13.2	-	-
7.	$0.417t^4-7.5t^2+t$	$0.5\sin 2t$	$6.54t+4.36(e^{-1.5t}-1)$	1.0	-	0.785	2.12	0.5	-
8.	$0.5(e^{2t}-1)$	$1.41\sqrt{t+0.01}-0.141$	$4.905t^2$	-	1.0	1.0	-	1.28	-
9.	$-1.37e^{-0.73t}-0.121e^{-8.27t}+1.25$	$\frac{1}{3}\ln\left \frac{2.08}{2.08-3t}\right $	$5.45t^2+t+\sin t$	0.481	-	0.66	-	-	-
10.	$1.666t^4-0.1t^5+2.03t^2$	$2.12\sin 1.73t$	$-2.45\cos 2t+1.06\sin 2t+2.45$	4.23	-	0.712	3.14	-	-
11.	$1-e^{2t}$	$\ln x_2+\sqrt{x_2-0.27^2} +0.13=t_2$	$4.95t^2+t+0.5(1-e^{-2t})$	0.27	1.0	-	-	-	-
12.	$3e^t-5.75t-3$	$\ln t+0.15 +1.89$	$-\cos t+4.95t^2-3.84t+1$	7.67	-	2.88	31.98	-	-
13.	$2.62(t^2+t)$	$e^{-2t}+8.82t-1$	$e^t(1.02\sin t-4.95\cos t)+4.95$	-	1.0	-	1.4	3.78	5.25
14.	$2t^3-3.82t^2$	$-\cos 2t+4.242t+1$	$-0.353e^{3.8t}+3.623e^{-0.8t}-3.27$	-	1.82	-	-	-	-
15.	$1.015(1-\cos 2t)$	$1.25e^t\sin 1.41t$	$+t^2+1.015t$	2.03	0.7854	1.0	-	3.36	-

Продовження таблиці відповідей

Варіант	$x_1(t_1)$	$x_2(t_2)$	$y_2(t_2)$	v_B	t_1	t_2	h	d	l_1
	М			М/с	с		М		
16.	$0.5t^3-0.4905t^2$	$0.45(e^{2.32t}-e^{-4.32t})$	$-2cost$	–	1.78	3.14	–	–	–
17.	$0.5(1-e^{-2t})+2.03t$	$1.8tsint$	$1.08te^{-t}$	2.16	–	1.57	–	–	–
18.	$2te^t$	$2.422e^{2t}-1.422e^{-2t}-1$	$2t^2-7.63t$	10.87	–	4.06	–	–	–
19.	$1-e^{-2t}$	$\ln\left \frac{t+2}{2}\right $	$2(1-cost)$	0.5	0.346	1.57	–	–	–
20.	$1.75(e^t-1)$	$0.81e^{2t}-1.81e^{-2t}-1$	$2t^2-2.625t$	–	1.1	2.1	–	–	3.5
21.	$0.5e^{2t}+t-0.5$	$2.5(1-e^{-2t})$	$9.81(ch\ t-1)$	–	0.693	0.46	–	–	2.2
22.	$0.25\ln 4t+1 $	$10\sqrt{4+0.2t}-20$	$\sin t-t$	0.5	–	–	–	–	–
23.	$0.2\sqrt{4+10t}-1$	$0.5t^2+0.353t$	$0.204te^t$	0.41	–	2.38	–	–	–
24.	$0.333t^3-2.88t^2+t$	$4.33(1-e^{-t})$	$e^t(2.405sint-4.905cost)+4.905$	–	6.4	1.0	–	–	–
25.	$\frac{2}{3}(1-e^{-3t})$	$0.163(e^{-0.4t}-e^{-2.6t})$	$3t^2$	0.368	–	1.0	–	–	–
26.	$1-cos\ 2t$	$1.23\sin\ 1.4t-0.5\cos\ 1.4t+0.5$	$4.905t^2-2t+0.5(1-e^{-2t})$	–	0.785	–	3.38	1.63	1.0
27.	$-\ln 1-t $	$t+0.5(1-e^{-2t})$	$0.866\sin\ 2t$	2.0	0.5	0.785	–	–	–
28.	$0.5(ch\ 1.41t+1)$	$0.5\sin\ 2t+0.36t$	$-5e^{-2t}-t+5$	1.36	–	–	–	–	–
29.	$2t^2$	$0.707(e^{0.5t}-e^{-3.5t})$	$\ln\left \frac{t-0.354}{0.354}\right $	–	1.0	2.97	–	–	2.0
30.	$-\frac{1}{0.1}\ln 1-01t $	$t^2+1.238t$	$0.5(cos\ 2t-1)+0.715t$	1.43	3.0	0.93	–	–	–