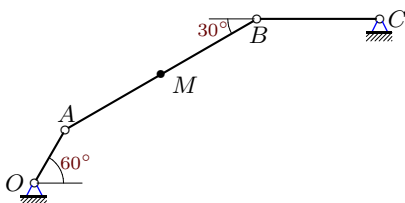
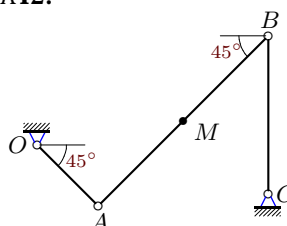
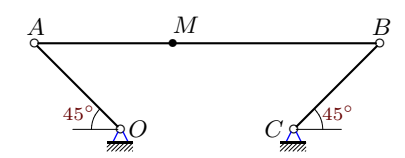
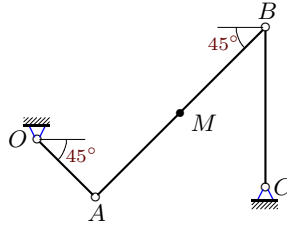
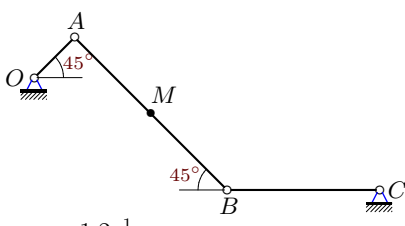
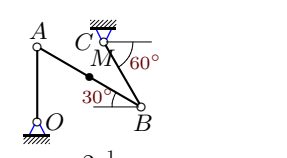


Движение точки по звену механизма

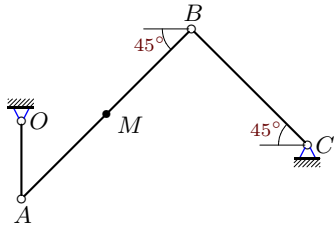
Плоский шарнирно-стержневой механизм приводится в движение кривошипом OA , который вращается против часовой стрелки с постоянной угловой скоростью ω . Вдоль стержня A движется точка M по закону $AM = \sigma(t)$ или $BM = \sigma(t)$. Положение механизма при $t = t_1$ указано на рисунке. Все размеры даны в см. Стержни, положение которых не задано углом, горизонтальны или вертикальны. Найти абсолютную скорость и абсолютное ускорение точки M в этот момент.

Кирсанов М.Н. Решебник. Теоретическая механика с. 209.

<p>Вариант 1 К12.</p>  <p>$\omega_{OA} = 1.6 \frac{1}{c}$, $AM = 6t + 8 \sin^2(\pi t/3)$; $t = 3$ с, $OA=10, AB=36, BC=20$</p>	<p>Вариант 2 К12.</p>  <p>$\omega_{OA} = 1.7 \frac{1}{c}$, $AM = 30t(3 - t)$; $t = 1$ с, $OA=43, AB=120, BC=79$</p>
<p>Вариант 3 К12.</p>  <p>$\omega_{OA} = 1.6 \frac{1}{c}$, $AM = 17t(3 - t)$; $t = 1$ с, $OA=30, AB=85, BC=30$</p>	<p>Вариант 4 К12.</p>  <p>$\omega_{OA} = 1.2 \frac{1}{c}$, $AM = 10t(2 + \cos(\pi t/3))$; $t = 6$ с, $OA=123, AB=360, BC=239$</p>
<p>Вариант 5 К12.</p>  <p>$\omega_{OA} = 1.2 \frac{1}{c}$, $BM = 12t(2 + \cos(\pi t/3))$; $t = 2$ с, $OA=19, AB=72, BC=51$</p>	<p>Вариант 6 К12.</p>  <p>$\omega_{OA} = 2 \frac{1}{c}$, $BM = 6t + 8 \sin^2(\pi t/6)$; $t = 1$ с, $OA=10, AB=16, BC=10$</p>

Вариант 7

K12.



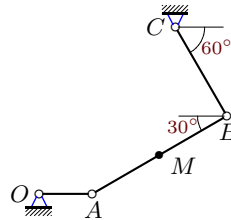
$$\omega_{OA} = 0.6 \frac{1}{c},$$

$$AM = 7(\sin(\pi t/6) + t^2); t = 5 \text{ c},$$

$$OA=116, AB=357, BC=244$$

Вариант 8

K12.



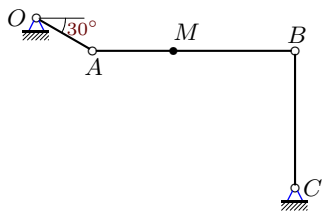
$$\omega_{OA} = 0.6 \frac{1}{c},$$

$$AM = 11(\sin(\pi t/6) + t^2); t = 5 \text{ c},$$

$$OA=190, AB=561, BC=370$$

Вариант 9

K12.



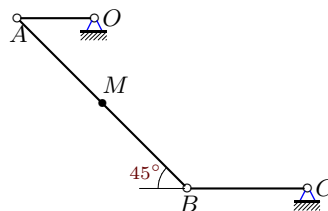
$$\omega_{OA} = 0.8 \frac{1}{c},$$

$$AM = 10(\sin(\pi t/6) + t^2); t = 3 \text{ c},$$

$$OA=80, AB=250, BC=170$$

Вариант 10

K12.



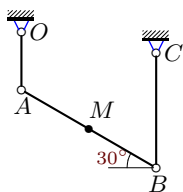
$$\omega_{OA} = 1.4 \frac{1}{c},$$

$$BM = 9t(16 - t); t = 3 \text{ c},$$

$$OA=225, AB=702, BC=351$$

Вариант 11

K12.



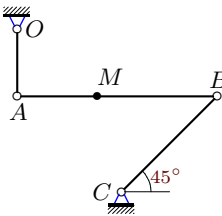
$$\omega_{OA} = 1.1 \frac{1}{c},$$

$$BM = 9t(2 + \cos(\pi t/3)); t = 2 \text{ c},$$

$$OA=20, AB=54, BC=40$$

Вариант 12

K12.



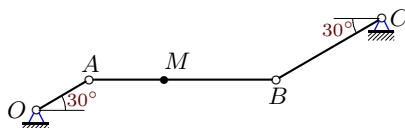
$$\omega_{OA} = 1.2 \frac{1}{c},$$

$$AM = 22t(5 - t); t = 2 \text{ c},$$

$$OA=111, AB=330, BC=223$$

Вариант 13

K12.



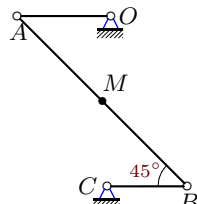
$$\omega_{OA} = 0.7 \frac{1}{c},$$

$$AM = 11(\sin(\pi t/6) + t^2); t = 3 \text{ c},$$

$$OA=90, AB=275, BC=180$$

Вариант 14

K12.



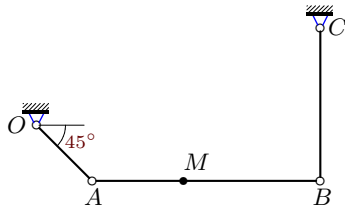
$$\omega_{OA} = 1.1 \frac{1}{c},$$

$$BM = 9t(2 + \cos(\pi t/3)); t = 2 \text{ c},$$

$$OA=21, AB=54, BC=18$$

Вариант 15

K12.



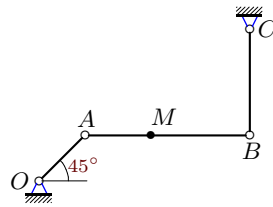
$$\omega_{OA} = 1.2 \frac{1}{c},$$

$$AM = 11t(5 - t); t = 2 \text{ c},$$

$$OA=57, AB=165, BC=111$$

Вариант 16

K12.



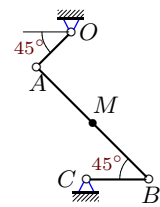
$$\omega_{OA} = 1.4 \frac{1}{c},$$

$$AM = 18t + 8 \sin^2(\pi t/4); t = 2 \text{ c},$$

$$OA=43, AB=110, BC=71$$

Вариант 17

K12.



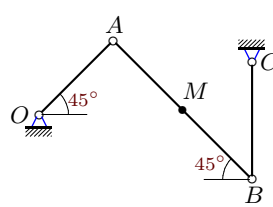
$$\omega_{OA} = 1.2 \frac{1}{c},$$

$$BM = 14t(2 + \cos(\pi t/3)); t = 2 \text{ c},$$

$$OA=26, AB=84, BC=33$$

Вариант 18

K12.



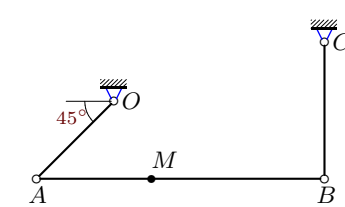
$$\omega_{OA} = 1.5 \frac{1}{c},$$

$$BM = 15(\sin(\pi t/6) + t^2); t = 1 \text{ c},$$

$$OA=24, AB=45, BC=27$$

Вариант 19

K12.



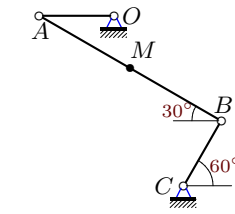
$$\omega_{OA} = 1.9 \frac{1}{c},$$

$$AM = 7t(2 + \cos(\pi t/3)); t = 4 \text{ c},$$

$$OA=40, AB=105, BC=50$$

Вариант 20

K12.



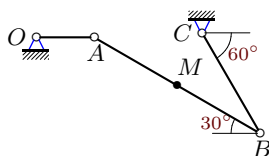
$$\omega_{OA} = 2.6 \frac{1}{c},$$

$$BM = 12t + 8 \sin^2(\pi t/6); t = 1 \text{ c},$$

$$OA=10, AB=28, BC=10$$

Вариант 21

K12.



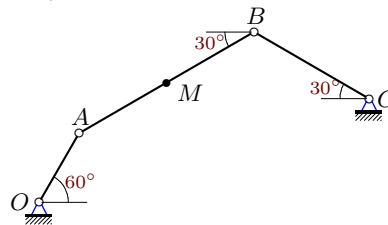
$$\omega_{OA} = 2.7 \frac{1}{c},$$

$$BM = 11(\sin(\pi t/6) + t^2); t = 1 \text{ c},$$

$$OA=10, AB=33, BC=20$$

Вариант 22

K12.



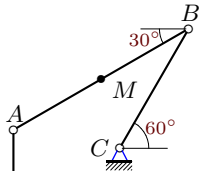
$$\omega_{OA} = 1.6 \frac{1}{c},$$

$$AM = 19t(3 - t); t = 1 \text{ c},$$

$$OA=30, AB=76, BC=50$$

Вариант 23

K12.



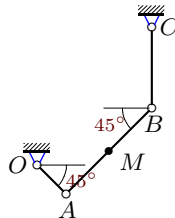
$$\omega_{OA} = 1.7 \frac{1}{c},$$

$$AM = 22t(3 - t); t = 1 \text{ c},$$

$$OA=30, AB=88, BC=60$$

Вариант 24

K12.



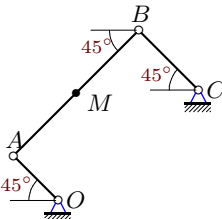
$$\omega_{OA} = 0.6 \frac{1}{c},$$

$$AM = 8(\sin(\pi t/6) + t^2); t = 5 \text{ c},$$

$$OA=137, AB=408, BC=272$$

Вариант 25

K12.



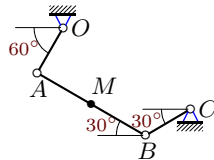
$$\omega_{OA} = 1.5 \frac{1}{c},$$

$$AM = 14t + 8\sin^2(\pi t/3); t = 3 \text{ c},$$

$$OA=30, AB=84, BC=40$$

Вариант 26

K12.



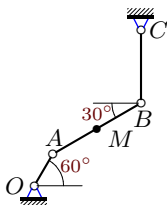
$$\omega_{OA} = 2 \frac{1}{c},$$

$$BM = 8(\sin(\pi t/6) + t^2); t = 1 \text{ c},$$

$$OA=10, AB=24, BC=10$$

Вариант 27

K12.



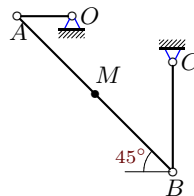
$$\omega_{OA} = 1.7 \frac{1}{c},$$

$$AM = 21t(3 - t); t = 1 \text{ c},$$

$$OA=30, AB=84, BC=60$$

Вариант 28

K12.



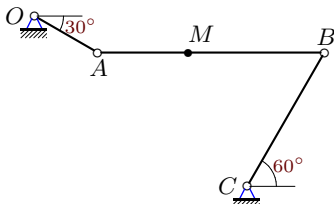
$$\omega_{OA} = 3.1 \frac{1}{c},$$

$$BM = 20t + 8\sin^2(\pi t/6); t = 1 \text{ c},$$

$$OA=11, AB=44, BC=22$$

Вариант 29

K12.



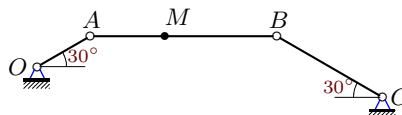
$$\omega_{OA} = 0.8 \frac{1}{c},$$

$$AM = 10(\sin(\pi t/6) + t^2); t = 3 \text{ c},$$

$$OA=80, AB=250, BC=170$$

Вариант 30

K12.



$$\omega_{OA} = 0.7 \frac{1}{c},$$

$$AM = 11(\sin(\pi t/6) + t^2); t = 3 \text{ c},$$

$$OA=90, AB=275, BC=180$$

Ответы

	ω_e	ε_e	v_r^T	v_e	v	W_r^T	W_e	W_C	W
1	-0.77	-2.45	6.00	8.00	2.00	17.55	65.67	9.24	67.86
2	-0.61	-2.06	30.00	81.73	109.39	-60.00	22.27	36.55	89.85
3	0.80	-0.64	17.00	34.61	18.25	-34.00	82.77	27.15	48.93
4	-0.41	-1.07	30.00	165.02	192.32	-65.80	33.96	24.60	104.06
5	0.32	0.88	3.77	25.49	22.19	8.61	5.65	2.38	8.38
6	-1.25	16.62	-9.63	26.46	33.56	-2.19	98.63	24.07	122.53
7	0.14	-0.11	66.83	55.02	118.62	13.04	27.91	18.42	48.29
8	-0.18	-0.05	105.01	75.40	169.37	20.49	71.24	36.96	49.89
9	-0.22	-0.13	60.00	46.15	97.83	17.26	50.85	26.60	34.92
10	0.00	-0.32	-90.00	315.00	259.29	18.00	370.40	0.00	385.68
11	0.00	-0.26	2.82	22.00	24.49	6.45	18.48	0.00	15.07
12	-0.40	-1.00	22.00	143.46	164.09	-44.00	34.83	17.76	66.21
13	0.00	0.48	66.00	63.00	64.55	18.98	49.11	0.00	36.36
14	0.00	-1.44	2.82	23.10	25.18	6.45	27.61	0.00	32.18
15	-0.29	-0.22	11.00	56.40	66.08	-22.00	77.01	6.45	93.28
16	-0.39	0.77	18.00	49.64	35.44	-9.87	70.94	13.93	85.69
17	-0.37	-1.30	4.39	34.88	38.86	10.04	18.15	3.26	20.90
18	-0.80	3.58	-36.80	40.25	74.99	-27.94	30.14	58.88	95.29
19	0.51	-0.42	35.89	62.67	95.26	28.05	124.17	36.74	169.90
20	0.80	-1.81	-15.63	17.20	11.56	-2.19	50.21	25.13	50.15
21	-1.42	-3.48	-26.99	13.50	40.49	-20.49	134.44	76.49	118.04
22	-0.73	-0.54	19.00	27.71	14.73	-38.00	104.85	27.71	151.87
23	0.58	-0.67	22.00	67.47	55.61	-44.00	119.54	25.50	129.09
24	-0.20	0.09	76.37	91.90	163.81	14.90	68.57	30.77	37.88
25	0.00	0.20	14.00	45.00	31.00	17.55	59.06	0.00	61.61
26	-0.48	1.03	-19.63	20.82	5.79	-14.90	52.47	18.89	73.44
27	-0.35	1.30	21.00	38.95	29.79	-42.00	81.04	14.72	122.29
28	1.10	0.50	-23.63	24.11	0.48	-2.19	98.38	51.79	57.25
29	-0.30	0.01	60.00	41.15	95.57	17.26	59.52	35.47	36.82
30	-0.40	-0.59	66.00	33.34	36.18	18.98	103.48	52.38	144.40