

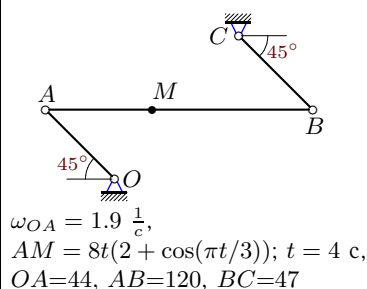
Движение точки по звену механизма

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.

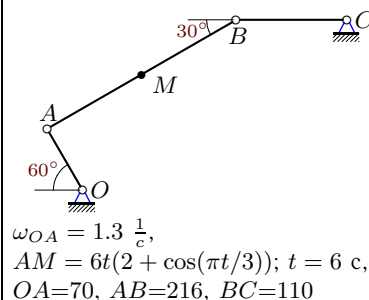
Вариант 1

K12.



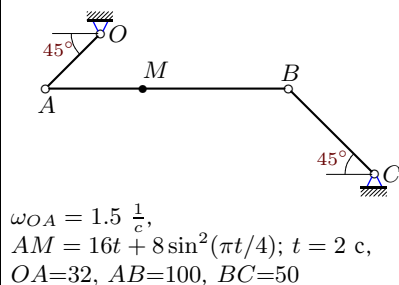
Вариант 2

K12.



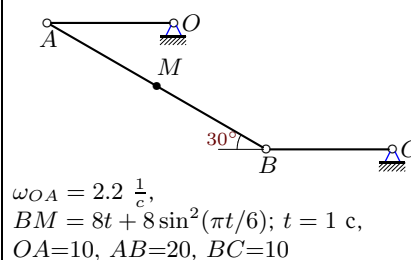
Вариант 3

K12.



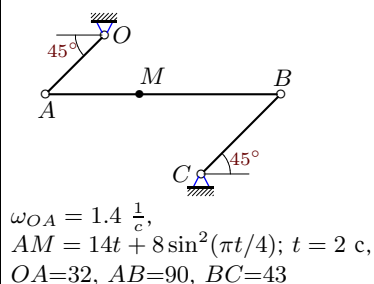
Вариант 4

K12.



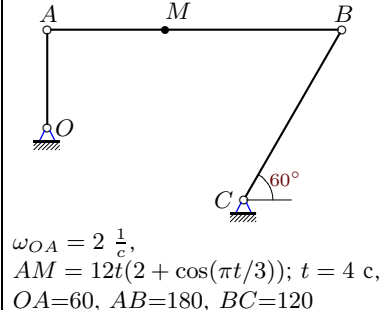
Вариант 5

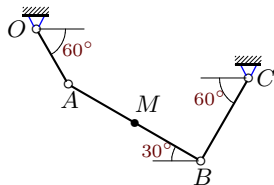
K12.



Вариант 6

K12.

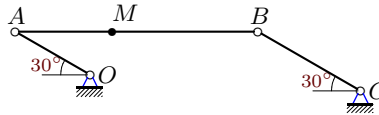


Вариант 7**K12.**

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

$$BM = 8t(2 + \cos(\pi t/3)); t = 2 \text{ c},$$

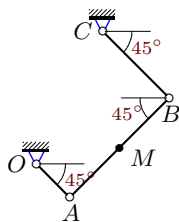
$$OA=20, AB=48, BC=30$$

Вариант 8**K12.**

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

$$AM = 15t(2 + \cos(\pi t/3)); t = 4 \text{ c},$$

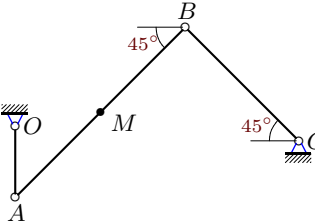
$$OA=80, AB=225, BC=110$$

Вариант 9**K12.**

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

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

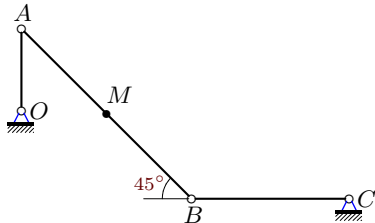
$$OA=137, AB=408, BC=273$$

Вариант 10**K12.**

$$\omega_{OA} = 1.3 \frac{1}{c},$$

$$AM = 13t(5 - t); t = 2 \text{ c},$$

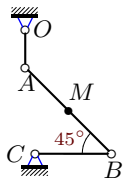
$$OA=46, AB=156, BC=104$$

Вариант 11**K12.**

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

$$BM = 11t(10 - t); t = 2 \text{ c},$$

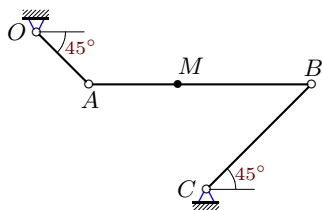
$$OA=120, AB=352, BC=231$$

Вариант 12**K12.**

$$\omega_{OA} = 2.8 \frac{1}{c},$$

$$BM = 14t + 8 \sin^2(\pi t/6); t = 1 \text{ c},$$

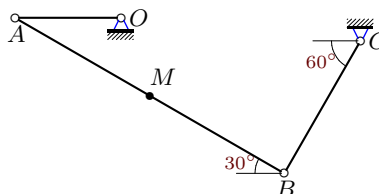
$$OA=10, AB=32, BC=20$$

Вариант 13**K12.**

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

$$AM = 14t(5 - t); t = 2 \text{ c},$$

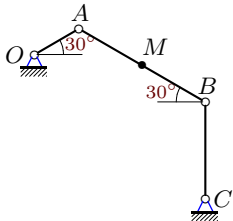
$$OA=70, AB=210, BC=140$$

Вариант 14**K12.**

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

$$BM = 4t(14 - t); t = 3 \text{ c},$$

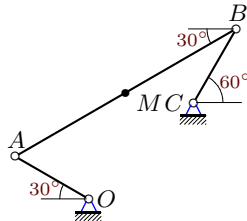
$$OA=90, AB=264, BC=130$$

Вариант 15**K12.**

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

$$BM = 8t(10 - t); t = 2 \text{ c},$$

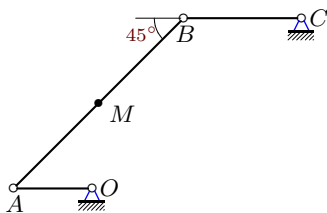
$$OA=90, AB=256, BC=170$$

Вариант 16**K12.**

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

$$AM = 10t + 8 \sin^2(\pi t/3); t = 3 \text{ c},$$

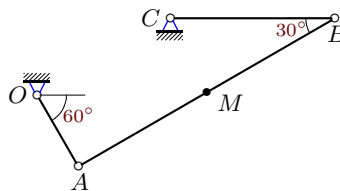
$$OA=20, AB=60, BC=20$$

Вариант 17**K12.**

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

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

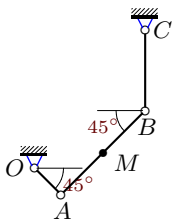
$$OA=100, AB=306, BC=150$$

Вариант 18**K12.**

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

$$AM = 6t + 8 \sin^2(\pi t/3); t = 3 \text{ c},$$

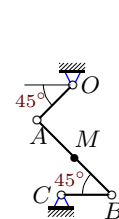
$$OA=10, AB=36, BC=20$$

Вариант 19**K12.**

$$\omega_{OA} = 1.3 \frac{1}{c},$$

$$AM = 7t(2 + \cos(\pi t/3)); t = 6 \text{ c},$$

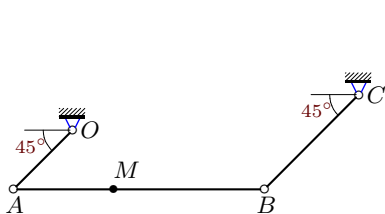
$$OA=80, AB=252, BC=170$$

Вариант 20**K12.**

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

$$BM = 7(\sin(\pi t/6) + t^2); t = 1 \text{ c},$$

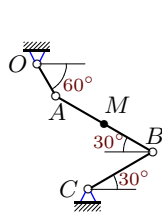
$$OA=10, AB=21, BC=10$$

Вариант 21**K12.**

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

$$AM = 9t(5 - t); t = 2 \text{ c},$$

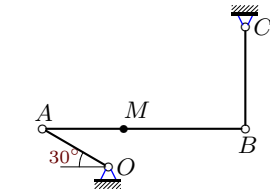
$$OA=45, AB=135, BC=72$$

Вариант 22**K12.**

$$\omega_{OA} = 2.5 \frac{1}{c},$$

$$BM = 10(\sin(\pi t/6) + t^2); t = 1 \text{ c},$$

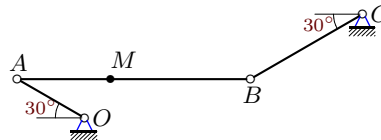
$$OA=10, AB=30, BC=20$$

Вариант 23**K12.**

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

$$AM = 12t + 8 \sin^2(\pi t/4); t = 2 \text{ c},$$

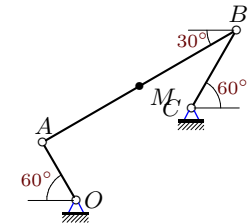
$$OA=30, AB=80, BC=40$$

Вариант 24**K12.**

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

$$AM = 6t(2 + \cos(\pi t/3)); t = 4 \text{ c},$$

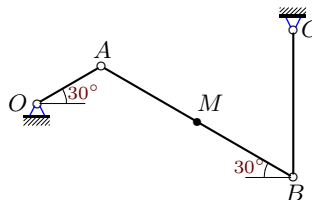
$$OA=30, AB=90, BC=50$$

Вариант 25**K12.**

$$\omega_{OA} = 1.8 \frac{1}{c},$$

$$AM = 25t(3 - t); t = 1 \text{ c},$$

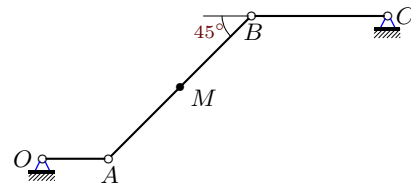
$$OA=30, AB=100, BC=40$$

Вариант 26**K12.**

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

$$BM = 5t(8 - t); t = 2 \text{ c},$$

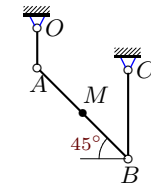
$$OA=40, AB=120, BC=80$$

Вариант 27**K12.**

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

$$AM = 9(\sin(\pi t/6) + t^2); t = 5 \text{ c},$$

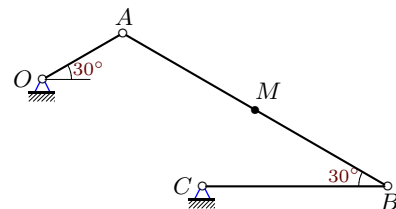
$$OA=150, AB=459, BC=310$$

Вариант 28**K12.**

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

$$BM = 13(\sin(\pi t/6) + t^2); t = 1 \text{ c},$$

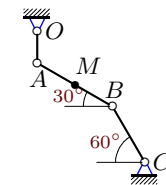
$$OA=12, AB=39, BC=27$$

Вариант 29**K12.**

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

$$BM = 11t(2 + \cos(\pi t/3)); t = 2 \text{ c},$$

$$OA=20, AB=66, BC=40$$

Вариант 30**K12.**

$$\omega_{OA} = 2.2 \frac{1}{c},$$

$$BM = 9(\sin(\pi t/6) + t^2); t = 1 \text{ c},$$

$$OA=10, AB=27, BC=20$$

Отвѣты

	ω_e	ε_e	v_r^τ	v_e	v	W_r^τ	W_e	W_C	W
1	0.00	3.62	41.02	83.60	61.82	32.06	128.13	0.00	156.99
2	-0.73	-3.16	18.00	120.38	107.42	-39.48	463.46	26.27	495.73
3	0.68	-1.11	16.00	34.61	50.40	-9.87	33.11	21.72	36.09
4	0.00	0.00	-11.63	22.00	19.06	-2.19	48.40	0.00	46.51
5	0.00	-1.72	14.00	44.80	55.59	-9.87	47.69	0.00	38.68
6	0.38	0.39	61.53	123.16	64.70	48.08	212.01	47.37	168.58
7	-0.40	-0.17	2.51	14.55	16.53	5.74	26.02	1.99	19.95
8	0.00	0.78	76.91	160.00	138.60	60.11	291.43	0.00	349.08
9	-0.00	-0.06	76.37	82.20	158.57	14.90	37.04	0.00	39.92
10	0.27	-0.46	13.00	47.28	59.19	-26.00	52.74	7.05	34.83
11	0.77	1.24	-66.00	135.76	201.76	22.00	112.50	101.82	168.48
12	-1.24	-0.20	-17.63	19.80	2.17	-2.19	95.48	43.63	126.22
13	-0.57	-0.02	14.00	60.57	74.35	-28.00	120.35	15.84	137.15
14	0.41	-0.22	-32.00	83.34	62.75	8.00	143.11	26.45	142.08
15	-0.53	-0.34	-48.00	116.91	164.91	16.00	257.83	50.63	206.86
16	1.00	-2.77	10.00	30.00	21.92	17.55	122.24	20.00	102.50
17	0.00	0.06	57.28	60.00	44.95	11.18	30.59	0.00	40.37
18	0.77	1.11	6.00	21.17	26.00	17.55	46.76	9.24	55.19
19	-0.41	0.35	21.00	116.28	135.38	-46.06	180.32	17.33	175.23
20	-0.81	-4.61	-17.17	19.01	8.50	-13.04	20.72	27.81	21.57
21	0.00	-0.25	9.00	54.00	60.70	-18.00	55.93	0.00	42.46
22	-0.96	0.13	-24.53	14.43	14.03	-18.63	75.71	47.22	118.25
23	0.45	0.51	12.00	30.29	23.61	-9.87	46.24	10.91	34.52
24	1.15	2.58	30.77	31.75	10.42	24.04	64.80	71.05	131.02
25	0.94	-3.34	25.00	71.44	55.03	-50.00	268.03	46.77	237.00
26	-0.50	0.72	-20.00	51.96	71.96	10.00	69.28	20.00	52.10
27	0.00	-0.25	85.92	90.00	162.54	16.77	42.42	0.00	28.29
28	0.00	-1.76	-31.89	32.40	24.61	-24.22	67.69	0.00	90.36
29	0.36	-0.32	3.45	31.75	29.60	7.89	40.28	2.51	34.87
30	0.81	-9.63	-22.08	29.10	22.21	-16.77	94.16	35.98	133.78