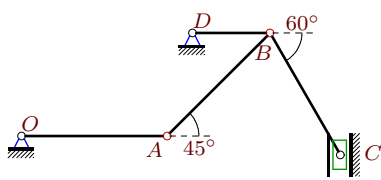
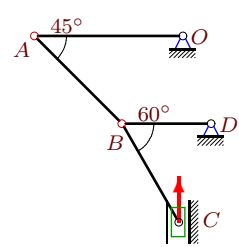
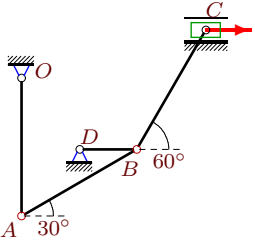
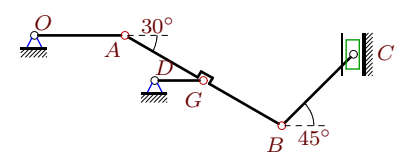
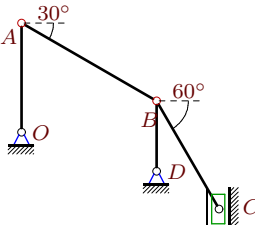
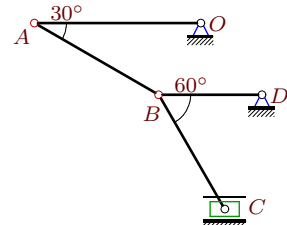
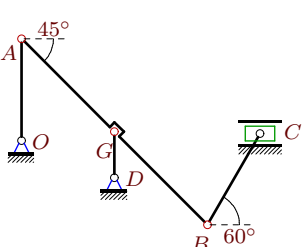
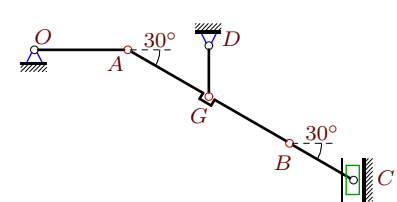
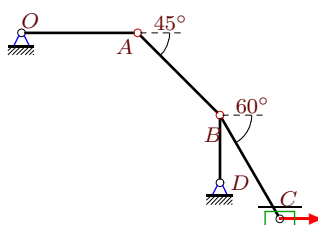
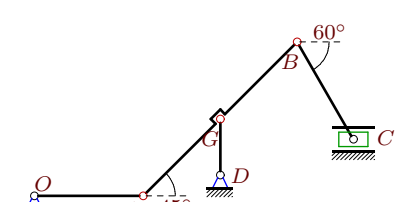


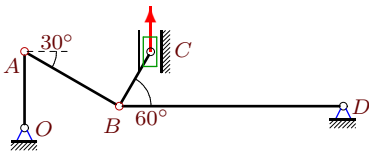
# Кинематический анализ механизма (4звена)

Найти скорости и ускорения шарниров плоского механизма.

Кирсанов М.Н. **Решebник. Теоретическая механика**/Под ред. А. И. Кириллова.– М.:ФИЗМАТЛИТ, 2002.– 384 с. (с. 279.)

<p><b>Задача 7.1</b></p>  <p> <math>\omega_{OA} = 1 \text{ рад/с,}</math>  <math>OA = 30 \text{ см,}</math>  <math>DB = 16 \text{ см,}</math>  <math>AB = 30 \text{ см,}</math>  <math>BC = 29 \text{ см.}</math> </p> <p style="font-size: small;">7.102</p>	<p><b>Задача 7.2</b></p>  <p> <math>v_C = 5 \text{ см/с,}</math>  <math>OA = 30 \text{ см,}</math>  <math>DB = 18 \text{ см,}</math>  <math>AB = 25 \text{ см,}</math>  <math>BC = 23 \text{ см.}</math> </p> <p style="font-size: small;">7.102</p>
<p><b>Задача 7.3</b></p>  <p> <math>v_C = 35 \text{ см/с,}</math>  <math>OA = 29 \text{ см,}</math>  <math>DB = 12 \text{ см,}</math>  <math>AB = 28 \text{ см,}</math>  <math>BC = 29 \text{ см.}</math> </p> <p style="font-size: small;">7.102</p>	<p><b>Задача 7.4</b></p>  <p> <math>\omega_{OA} = 28 \text{ рад/с,}</math>  <math>OA = 26 \text{ см,}</math>  <math>BG = 26 \text{ см,}</math>  <math>DG = 14 \text{ см,}</math>  <math>AG = 26 \text{ см,}</math>  <math>BC = 29 \text{ см.}</math> </p> <p style="font-size: small;">7.102</p>
<p><b>Задача 7.5</b></p>  <p> <math>\omega_{DB} = 3 \text{ рад/с,}</math>  <math>OA = 28 \text{ см,}</math>  <math>DB = 18 \text{ см,}</math>  <math>AB = 40 \text{ см,}</math>  <math>BC = 32 \text{ см.}</math> </p> <p style="font-size: small;">7.102</p>	<p><b>Задача 7.6</b></p>  <p> <math>\omega_{DB} = 29 \text{ рад/с,}</math>  <math>OA = 29 \text{ см,}</math>  <math>DB = 18 \text{ см,}</math>  <math>AB = 25 \text{ см,}</math>  <math>BC = 23 \text{ см.}</math> </p> <p style="font-size: small;">7.102</p>
<p><b>Задача 7.7</b></p>  <p> <math>\omega_{OA} = 33 \text{ рад/с,}</math>  <math>OA = 31 \text{ см,}</math>  <math>BG = 40 \text{ см,}</math>  <math>DG = 14 \text{ см,}</math>  <math>AG = 40 \text{ см,}</math>  <math>BC = 32 \text{ см.}</math> </p> <p style="font-size: small;">7.102</p>	<p><b>Задача 7.8</b></p>  <p> <math>\omega_{OA} = 27 \text{ рад/с,}</math>  <math>OA = 33 \text{ см,}</math>  <math>BG = 33 \text{ см,}</math>  <math>DG = 18 \text{ см,}</math>  <math>AG = 33 \text{ см,}</math>  <math>BC = 26 \text{ см.}</math> </p> <p style="font-size: small;">7.102</p>
<p><b>Задача 7.9</b></p>  <p> <math>v_C = 55 \text{ см/с,}</math>  <math>OA = 31 \text{ см,}</math>  <math>DB = 18 \text{ см,}</math>  <math>AB = 31 \text{ см,}</math>  <math>BC = 32 \text{ см.}</math> </p> <p style="font-size: small;">7.102</p>	<p><b>Задача 7.10</b></p>  <p> <math>\omega_{OA} = 32 \text{ рад/с,}</math>  <math>OA = 31 \text{ см,}</math>  <math>BG = 31 \text{ см,}</math>  <math>DG = 16 \text{ см,}</math>  <math>AG = 31 \text{ см,}</math>  <math>BC = 32 \text{ см.}</math> </p> <p style="font-size: small;">7.102</p>

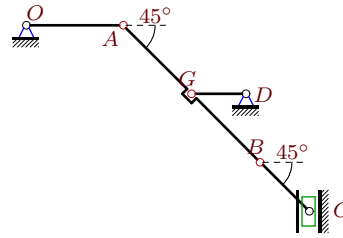
**Задача 7.11**



$v_C = 115 \text{ см/с}$ ,  
 $OA = 28 \text{ см}$ ,  
 $DB = 82 \text{ см}$ ,  
 $AB = 40 \text{ см}$ ,  
 $BC = 23 \text{ см}$ .

7.102

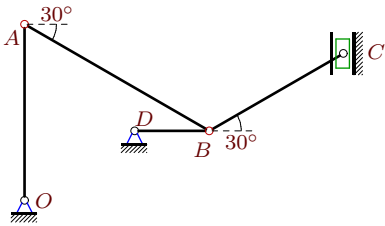
**Задача 7.12**



$\omega_{OA} = 26 \text{ рад/с}$ ,  
 $OA = 32 \text{ см}$ ,  
 $BG = 32 \text{ см}$ ,  
 $DG = 18 \text{ см}$ ,  
 $AG = 32 \text{ см}$ ,  
 $BC = 23 \text{ см}$ .

7.102

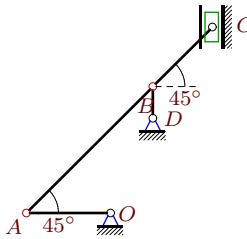
**Задача 7.13**



$\omega_{DB} = 2 \text{ рад/с}$ ,  
 $OA = 33 \text{ см}$ ,  
 $DB = 14 \text{ см}$ ,  
 $AB = 40 \text{ см}$ ,  
 $BC = 29 \text{ см}$ .

7.102

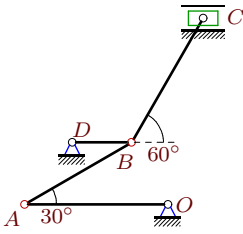
**Задача 7.14**



$\omega_{OA} = 22 \text{ рад/с}$ ,  
 $OA = 32 \text{ см}$ ,  
 $DB = 12 \text{ см}$ ,  
 $AB = 68 \text{ см}$ ,  
 $BC = 32 \text{ см}$ .

7.102

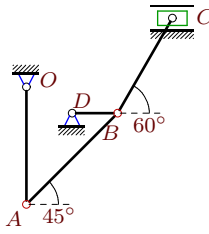
**Задача 7.15**



$\omega_{OA} = 29 \text{ рад/с}$ ,  
 $OA = 29 \text{ см}$ ,  
 $DB = 12 \text{ см}$ ,  
 $AB = 25 \text{ см}$ ,  
 $BC = 29 \text{ см}$ .

7.102

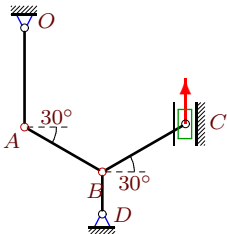
**Задача 7.16**



$\omega_{DB} = 2 \text{ рад/с}$ ,  
 $OA = 31 \text{ см}$ ,  
 $DB = 12 \text{ см}$ ,  
 $AB = 34 \text{ см}$ ,  
 $BC = 29 \text{ см}$ .

7.102

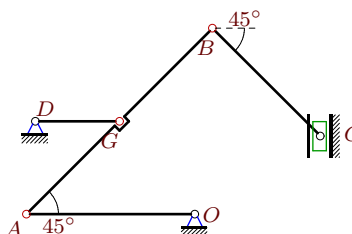
**Задача 7.17**



$v_C = 140 \text{ см/с}$ ,  
 $OA = 33 \text{ см}$ ,  
 $DB = 14 \text{ см}$ ,  
 $AB = 30 \text{ см}$ ,  
 $BC = 32 \text{ см}$ .

7.102

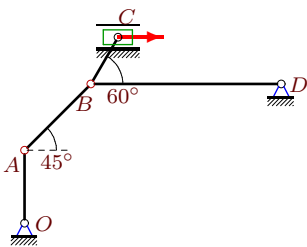
**Задача 7.18**



$\omega_{DG} = 20 \text{ рад/с}$ ,  
 $OA = 32 \text{ см}$ ,  
 $BG = 25 \text{ см}$ ,  
 $DG = 16 \text{ см}$ ,  
 $AG = 25 \text{ см}$ ,  
 $BC = 29 \text{ см}$ .

7.102

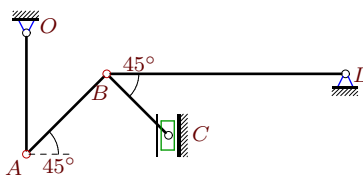
**Задача 7.19**



$v_C = 150 \text{ см/с}$ ,  
 $OA = 31 \text{ см}$ ,  
 $DB = 81 \text{ см}$ ,  
 $AB = 40 \text{ см}$ ,  
 $BC = 23 \text{ см}$ .

7.102

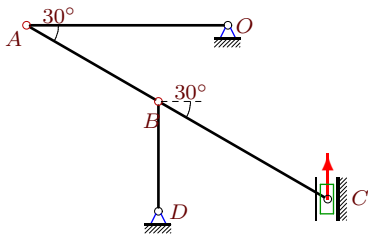
**Задача 7.20**



$\omega_{DB} = 19 \text{ рад/с}$ ,  
 $OA = 32 \text{ см}$ ,  
 $DB = 63 \text{ см}$ ,  
 $AB = 30 \text{ см}$ ,  
 $BC = 23 \text{ см}$ .

7.102

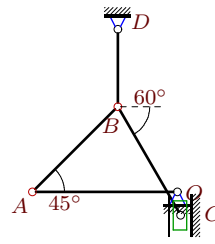
**Задача 7.21**



$v_c = 135 \text{ см/с}$ ,  
 $OA = 33 \text{ см}$ ,  
 $DB = 18 \text{ см}$ ,  
 $AB = 25 \text{ см}$ ,  
 $BC = 32 \text{ см}$ .

7.102

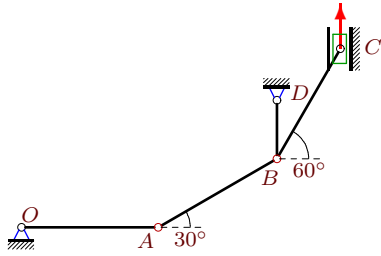
**Задача 7.22**



$\omega_{DB} = 15 \text{ рад/с}$ ,  
 $OA = 30 \text{ см}$ ,  
 $DB = 16 \text{ см}$ ,  
 $AB = 25 \text{ см}$ ,  
 $BC = 26 \text{ см}$ .

7.102

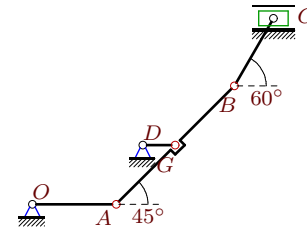
**Задача 7.23**



$v_c = 5 \text{ см/с}$ ,  
 $OA = 28 \text{ см}$ ,  
 $DB = 12 \text{ см}$ ,  
 $AB = 28 \text{ см}$ ,  
 $BC = 26 \text{ см}$ .

7.102

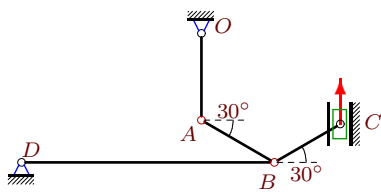
**Задача 7.24**



$\omega_{OA} = 32 \text{ рад/с}$ ,  
 $OA = 31 \text{ см}$ ,  
 $BG = 31 \text{ см}$ ,  
 $DG = 12 \text{ см}$ ,  
 $AG = 31 \text{ см}$ ,  
 $BC = 29 \text{ см}$ .

7.102

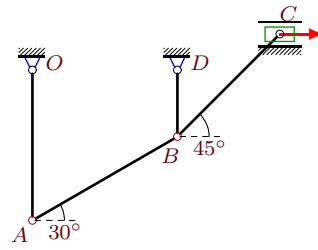
**Задача 7.25**



$v_c = 45 \text{ см/с}$ ,  
 $OA = 33 \text{ см}$ ,  
 $DB = 96 \text{ см}$ ,  
 $AB = 32 \text{ см}$ ,  
 $BC = 29 \text{ см}$ .

7.102

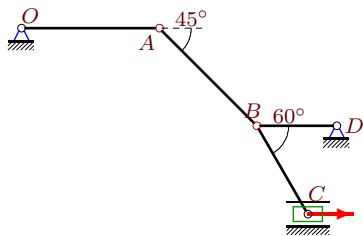
**Задача 7.26**



$v_c = 50 \text{ см/с}$ ,  
 $OA = 27 \text{ см}$ ,  
 $DB = 12 \text{ см}$ ,  
 $AB = 30 \text{ см}$ ,  
 $BC = 26 \text{ см}$ .

7.102

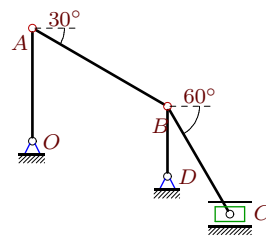
**Задача 7.27**



$v_c = 115 \text{ см/с}$ ,  
 $OA = 31 \text{ см}$ ,  
 $DB = 18 \text{ см}$ ,  
 $AB = 31 \text{ см}$ ,  
 $BC = 23 \text{ см}$ .

7.102

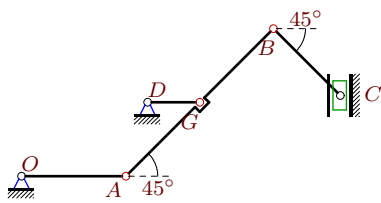
**Задача 7.28**



$\omega_{DB} = 8 \text{ рад/с}$ ,  
 $OA = 29 \text{ см}$ ,  
 $DB = 18 \text{ см}$ ,  
 $AB = 40 \text{ см}$ ,  
 $BC = 32 \text{ см}$ .

7.102

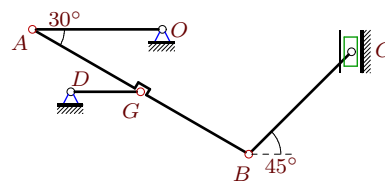
**Задача 7.29**



$\omega_{DG} = 11 \text{ рад/с}$ ,  
 $OA = 32 \text{ см}$ ,  
 $BG = 32 \text{ см}$ ,  
 $DG = 16 \text{ см}$ ,  
 $AG = 32 \text{ см}$ ,  
 $BC = 29 \text{ см}$ .

7.102

**Задача 7.30**



$\omega_{DG} = 18 \text{ рад/с}$ ,  
 $OA = 26 \text{ см}$ ,  
 $BG = 25 \text{ см}$ ,  
 $DG = 14 \text{ см}$ ,  
 $AG = 25 \text{ см}$ ,  
 $BC = 29 \text{ см}$ .

7.102

**Кинематический анализ механизма (4звена)**

n	$v_A$	$v_B$	$v_C$	$v_G$	$a_A$	$a_B$	$a_C$	$a_G$
1	0.300	0.300	0.300	–	0.300	0.621	0.587	–
2	0.050	0.050	0.050	–	0.009	0.016	0.000	–
3	0.117	0.202	0.350	–	0.349	0.913	0.000	–
4	7.280	7.280	7.280	7.280	203.840	820.027	1158.528	484.653
5	0.540	0.540	0.312	–	1.094	1.620	0.217	–
6	5.220	5.220	9.041	–	136.820	151.380	796.390	–
7	10.230	10.230	10.230	10.230	337.590	1418.403	2824.626	852.543
8	8.910	13.610	8.910	5.144	240.570	863.196	4956.667	546.229
9	0.550	0.550	0.550	–	2.689	3.361	0.000	–
10	9.920	22.182	37.022	9.920	317.440	1514.237	1212.671	859.408
11	0.664	1.150	1.150	–	6.525	1.862	0.000	–
12	8.320	8.320	8.320	8.320	216.320	1554.155	216.320	713.415
13	0.162	0.280	0.280	–	0.314	0.560	0.970	–
14	7.040	7.040	7.040	–	154.880	549.035	489.336	–
15	8.410	8.410	14.567	–	243.890	1559.011	40.648	–
16	0.240	0.240	0.416	–	0.263	0.480	2.069	–
17	0.808	0.808	1.400	–	16.084	12.991	0.000	–
18	3.200	3.200	3.200	3.200	101.193	186.590	256.000	64.000
19	0.866	0.866	1.500	–	23.301	14.556	0.000	–
20	11.970	11.970	11.970	–	1215.981	227.430	227.430	–
21	1.350	0.779	1.350	–	25.663	7.609	0.000	–
22	2.400	2.400	1.386	–	84.186	36.000	70.108	–
23	0.150	0.087	0.050	–	0.371	0.070	0.000	–
24	9.920	9.920	17.182	9.920	317.440	1661.303	2296.222	961.825
25	0.260	0.450	0.450	–	0.701	0.422	0.000	–
26	0.500	0.500	0.500	–	1.691	2.946	0.000	–
27	0.664	0.664	1.150	–	11.399	7.832	0.000	–
28	1.440	1.440	1.440	–	7.582	11.520	19.953	–
29	1.760	1.760	1.760	1.760	13.690	30.611	38.720	19.360
30	2.520	2.520	2.520	2.520	123.314	166.937	236.015	45.360