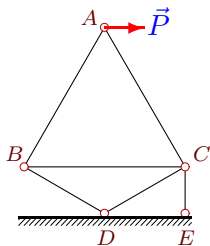


# Плоская конструкция из 6 стержней

Кирсанов М.Н. **Решebник. Теоретическая механика**/Под ред. А. И. Кириллова.—  
М.: ФИЗМАТЛИТ, 2008. — 384 с. (с.14.)

## Задача S-1.1.

Шеповаленко Ангелина



$$P=17 \text{ кН},$$

$$\angle ACB=60^\circ,$$

$$\angle ABC=60^\circ,$$

$$\angle BDC=120^\circ,$$

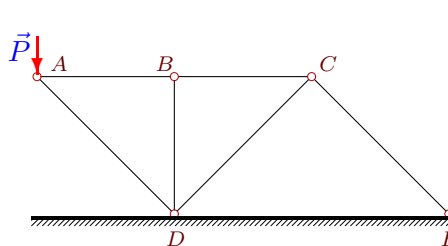
$$\angle BCD=30^\circ,$$

$$\angle CDE=30^\circ,$$

$$\angle CED=90^\circ.$$

## Задача S-1.2.

Миронова Дарья



$$P=2 \text{ кН},$$

$$\angle ABD=90^\circ,$$

$$\angle ADB=45^\circ,$$

$$\angle BDC=45^\circ,$$

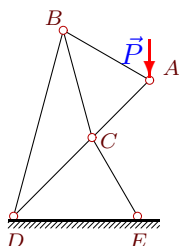
$$\angle BCD=45^\circ,$$

$$\angle CDE=45^\circ,$$

$$\angle CED=45^\circ.$$

## Задача S-1.3.

Плетнев Никита



$$P=2 \text{ кН},$$

$$\angle ACB=60^\circ,$$

$$\angle ABC=45^\circ,$$

$$\angle BDC=30^\circ,$$

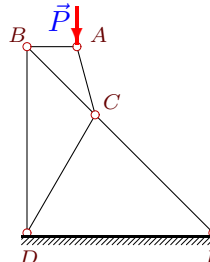
$$\angle BCD=120^\circ,$$

$$\angle CDE=45^\circ,$$

$$\angle CED=60^\circ.$$

## Задача S-1.4.

Борзыл Анастасия



$$P=31 \text{ кН},$$

$$\angle ACB=30^\circ,$$

$$\angle ABC=45^\circ,$$

$$\angle BDC=30^\circ,$$

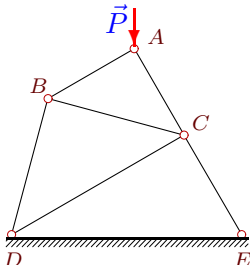
$$\angle BCD=105^\circ,$$

$$\angle CDE=60^\circ,$$

$$\angle CED=45^\circ.$$

## Задача S-1.5.

Кочнева Елена Павловна



$$P=8 \text{ кН},$$

$$\angle ACB=45^\circ,$$

$$\angle ABC=45^\circ,$$

$$\angle BDC=45^\circ,$$

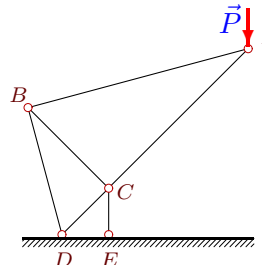
$$\angle BCD=45^\circ,$$

$$\angle CDE=30^\circ,$$

$$\angle CED=60^\circ.$$

## Задача S-1.6.

Иванова Елизавета



$$P=24 \text{ кН},$$

$$\angle ACB=90^\circ,$$

$$\angle ABC=60^\circ,$$

$$\angle BDC=60^\circ,$$

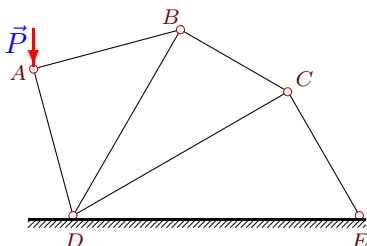
$$\angle BCD=90^\circ,$$

$$\angle CDE=45^\circ,$$

$$\angle CED=90^\circ.$$

## Задача S-1.7.

Буланова Алина



$$P=14 \text{ кН},$$

$$\angle ABD=45^\circ,$$

$$\angle ADB=45^\circ,$$

$$\angle BDC=30^\circ,$$

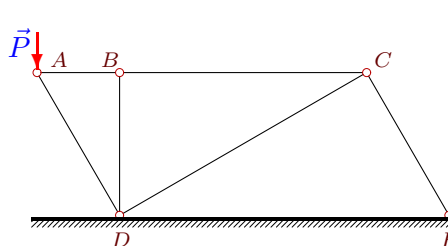
$$\angle BCD=60^\circ,$$

$$\angle CDE=30^\circ,$$

$$\angle CED=60^\circ.$$

## Задача S-1.8.

Аванесян Роман



$$P=20 \text{ кН},$$

$$\angle ABD=90^\circ,$$

$$\angle ADB=30^\circ,$$

$$\angle BDC=60^\circ,$$

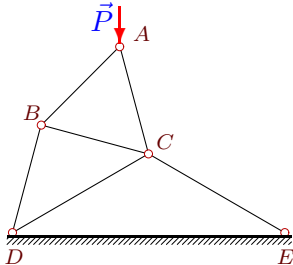
$$\angle BCD=30^\circ,$$

$$\angle CDE=30^\circ,$$

$$\angle CED=60^\circ.$$

## Задача S-1.9.

Данилов Василий



$$P=18 \text{ кН},$$

$$\angle ACB=60^\circ,$$

$$\angle ABC=60^\circ,$$

$$\angle BDC=45^\circ,$$

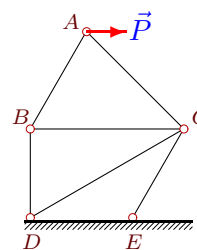
$$\angle BCD=45^\circ,$$

$$\angle CDE=30^\circ,$$

$$\angle CED=30^\circ.$$

## Задача S-1.10.

Львов Дмитрий



$$P=9 \text{ кН},$$

$$\angle ACB=45^\circ,$$

$$\angle ABC=60^\circ,$$

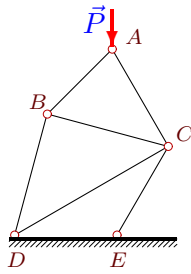
$$\angle BDC=60^\circ,$$

$$\angle BCD=30^\circ,$$

$$\angle CDE=30^\circ,$$

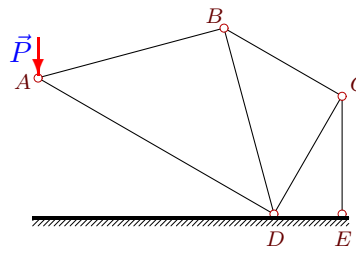
$$\angle CED=120^\circ.$$

**Задача S-1.11.**



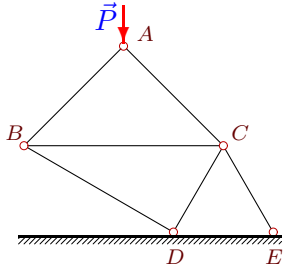
$P=29$  кН,  
 $\angle ACB=45^\circ$ ,  
 $\angle ABC=60^\circ$ ,  
 $\angle BDC=45^\circ$ ,  
 $\angle BCD=45^\circ$ ,  
 $\angle CDE=30^\circ$ ,  
 $\angle CED=120^\circ$ .

**Задача S-1.12.**



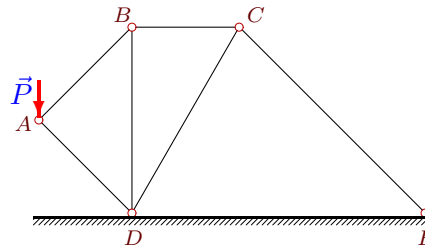
$P=10$  кН,  
 $\angle ABD=90^\circ$ ,  
 $\angle ADB=45^\circ$ ,  
 $\angle BDC=45^\circ$ ,  
 $\angle BCD=90^\circ$ ,  
 $\angle CDE=60^\circ$ ,  
 $\angle CED=90^\circ$ .

**Задача S-1.13.**



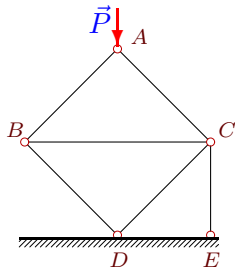
$P=29$  кН,  
 $\angle ACB=45^\circ$ ,  
 $\angle ABC=45^\circ$ ,  
 $\angle BDC=90^\circ$ ,  
 $\angle BCD=60^\circ$ ,  
 $\angle CDE=60^\circ$ ,  
 $\angle CED=60^\circ$ .

**Задача S-1.14.**



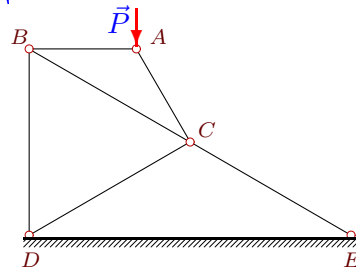
$P=7$  кН,  
 $\angle ABD=45^\circ$ ,  
 $\angle ADB=45^\circ$ ,  
 $\angle BDC=30^\circ$ ,  
 $\angle BCD=60^\circ$ ,  
 $\angle CDE=60^\circ$ ,  
 $\angle CED=45^\circ$ .

**Задача S-1.15.**



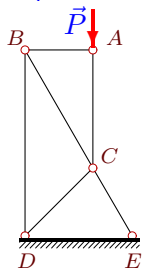
$P=10$  кН,  
 $\angle ACB=45^\circ$ ,  
 $\angle ABC=45^\circ$ ,  
 $\angle BDC=90^\circ$ ,  
 $\angle BCD=45^\circ$ ,  
 $\angle CDE=45^\circ$ ,  
 $\angle CED=90^\circ$ .

**Задача S-1.16.**



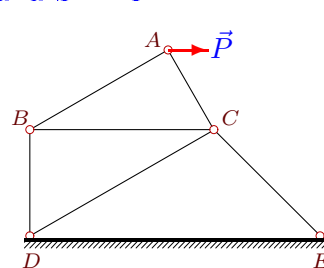
$P=28$  кН,  
 $\angle ACB=30^\circ$ ,  
 $\angle ABC=30^\circ$ ,  
 $\angle BDC=60^\circ$ ,  
 $\angle BCD=60^\circ$ ,  
 $\angle CDE=30^\circ$ ,  
 $\angle CED=30^\circ$ .

**Задача S-1.17.**



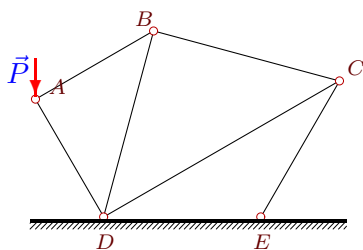
$P=2$  кН,  
 $\angle ACB=30^\circ$ ,  
 $\angle ABC=60^\circ$ ,  
 $\angle BDC=45^\circ$ ,  
 $\angle BCD=105^\circ$ ,  
 $\angle CDE=45^\circ$ ,  
 $\angle CED=60^\circ$ .

**Задача S-1.18.**



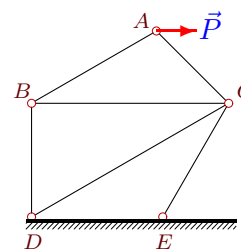
$P=9$  кН,  
 $\angle ACB=60^\circ$ ,  
 $\angle ABC=30^\circ$ ,  
 $\angle BDC=60^\circ$ ,  
 $\angle BCD=30^\circ$ ,  
 $\angle CDE=30^\circ$ ,  
 $\angle CED=45^\circ$ .

**Задача S-1.19.**



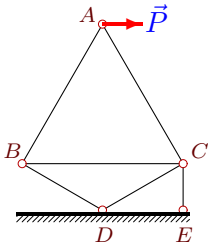
$P=4$  кН,  
 $\angle ABD=45^\circ$ ,  
 $\angle ADB=45^\circ$ ,  
 $\angle BDC=45^\circ$ ,  
 $\angle BCD=45^\circ$ ,  
 $\angle CDE=30^\circ$ ,  
 $\angle CED=120^\circ$ .

**Задача S-1.20.**



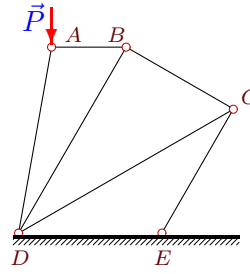
$P=19$  кН,  
 $\angle ACB=45^\circ$ ,  
 $\angle ABC=30^\circ$ ,  
 $\angle BDC=60^\circ$ ,  
 $\angle BCD=30^\circ$ ,  
 $\angle CDE=30^\circ$ ,  
 $\angle CED=120^\circ$ .

**Задача S-1.21.**



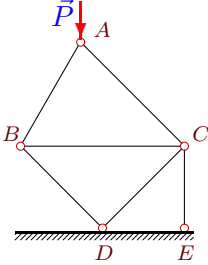
$P=6$  кН,  
 $\angle ACB=60^\circ$ ,  
 $\angle ABC=60^\circ$ ,  
 $\angle BDC=120^\circ$ ,  
 $\angle BCD=30^\circ$ ,  
 $\angle CDE=30^\circ$ ,  
 $\angle CED=90^\circ$ .

**Задача S-1.22.**



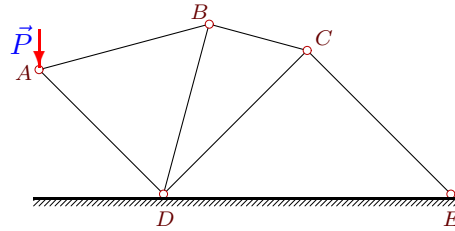
$P=23$  кН,  
 $\angle ABD=60^\circ$ ,  
 $\angle ADB=20^\circ$ ,  
 $\angle BDC=30^\circ$ ,  
 $\angle BCD=60^\circ$ ,  
 $\angle CDE=30^\circ$ ,  
 $\angle CED=120^\circ$ .

**Задача S-1.23.**



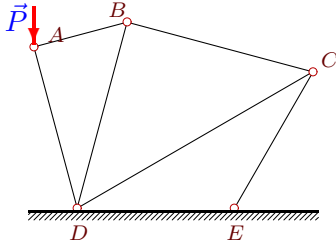
$P=28$  кН,  
 $\angle ACB=45^\circ$ ,  
 $\angle ABC=60^\circ$ ,  
 $\angle BDC=90^\circ$ ,  
 $\angle BCD=45^\circ$ ,  
 $\angle CDE=45^\circ$ ,  
 $\angle CED=90^\circ$ .

**Задача S-1.24.**



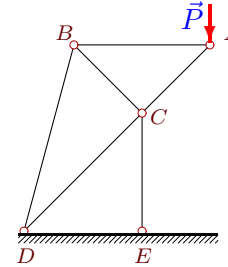
$P=6$  кН,  
 $\angle ABD=60^\circ$ ,  
 $\angle ADB=60^\circ$ ,  
 $\angle BDC=30^\circ$ ,  
 $\angle BCD=60^\circ$ ,  
 $\angle CDE=45^\circ$ ,  
 $\angle CED=45^\circ$ .

**Задача S-1.25.**



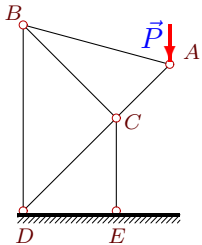
$P=9$  кН,  
 $\angle ABD=60^\circ$ ,  
 $\angle ADB=30^\circ$ ,  
 $\angle BDC=45^\circ$ ,  
 $\angle BCD=45^\circ$ ,  
 $\angle CDE=30^\circ$ ,  
 $\angle CED=120^\circ$ .

**Задача S-1.26.**



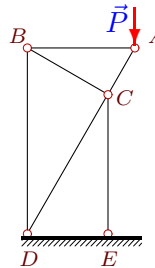
$P=33$  кН,  
 $\angle ACB=90^\circ$ ,  
 $\angle ABC=45^\circ$ ,  
 $\angle BDC=30^\circ$ ,  
 $\angle BCD=90^\circ$ ,  
 $\angle CDE=45^\circ$ ,  
 $\angle CED=90^\circ$ .

**Задача S-1.27.**



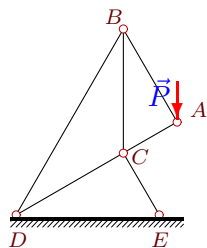
$P=4$  кН,  
 $\angle ACB=90^\circ$ ,  
 $\angle ABC=30^\circ$ ,  
 $\angle BDC=45^\circ$ ,  
 $\angle BCD=90^\circ$ ,  
 $\angle CDE=45^\circ$ ,  
 $\angle CED=90^\circ$ .

**Задача S-1.28.**



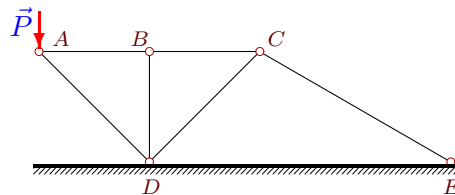
$P=20$  кН,  
 $\angle ACB=90^\circ$ ,  
 $\angle ABC=30^\circ$ ,  
 $\angle BDC=30^\circ$ ,  
 $\angle BCD=90^\circ$ ,  
 $\angle CDE=60^\circ$ ,  
 $\angle CED=90^\circ$ .

**Задача S-1.29.**



$P=27$  кН,  
 $\angle ACB=60^\circ$ ,  
 $\angle ABC=30^\circ$ ,  
 $\angle BDC=30^\circ$ ,  
 $\angle BCD=120^\circ$ ,  
 $\angle CDE=30^\circ$ ,  
 $\angle CED=60^\circ$ .

**Задача S-1.30.**



$P=31$  кН,  
 $\angle ABD=90^\circ$ ,  
 $\angle ADB=45^\circ$ ,  
 $\angle BDC=45^\circ$ ,  
 $\angle BCD=45^\circ$ ,  
 $\angle CDE=45^\circ$ ,  
 $\angle CED=30^\circ$ .

S-1

**Ответы.**

**Плоская конструкция из 6 стержней**

05-Mar-17

	$S_{AB}$	$S_{AC}$	$S_{AD}$	$S_{BC}$	$S_{BD}$	$S_{CD}$	$S_{CE}$	
1	17.000	-17.000	—	-34.000	29.445	49.075	-39.260	Шеповаленко Ангелина
2	2.000	—	-2.828	2.000	0.000	-1.414	1.414	Миронова Дарья
3	1.464	-1.793	—	-2.828	2.071	-2.551	-2.536	Плетнев Никита
4	-8.306	-32.094	—	11.747	-8.306	-16.613	-11.747	Борзых Анастасия
5	-4.000	-6.928	—	2.828	-2.828	-2.000	-4.928	Кочнева Елена Павловна
6	33.941	-46.364	—	-67.882	58.788	21.518	-96.000	Иванова Елизавета
7	3.623	—	-13.523	2.562	-2.562	-1.281	2.219	Буланова Алина
8	11.547	—	-23.094	11.547	-0.000	-10.000	5.774	Аванесян Роман
9	-5.379	-14.697	—	2.690	-4.659	-12.804	-14.196	Данилов Василий
10	6.588	-8.069	—	-3.294	5.706	21.294	-18.883	Львов Дмитрий
11	-15.012	-21.229	—	7.506	-13.000	22.271	-31.844	
12	12.247	—	-13.660	17.321	-12.247	-30.000	34.641	
13	-20.506	-20.506	—	39.615	-29.000	-33.486	16.743	
14	4.950	—	-4.950	3.500	-3.500	-2.562	3.138	
15	-7.071	-7.071	—	10.000	-7.071	-7.071	-0.000	
16	-16.166	-32.332	—	18.667	-9.333	-18.667	-18.667	
17	0.000	-2.000	—	-0.000	0.000	-1.035	-1.464	
18	7.794	-4.500	—	-6.750	3.897	3.736	-8.153	
19	2.000	—	-3.464	1.414	-1.414	-2.732	2.000	
20	13.909	-9.835	—	-12.046	6.954	39.863	-31.046	
21	6.000	-6.000	—	-12.000	10.392	17.321	-13.856	
22	-4.056	—	-23.355	-3.512	2.028	7.024	-6.083	
23	-20.497	-14.494	—	28.000	-25.104	-25.104	7.503	
24	4.899	—	-6.692	4.243	-2.449	-2.121	3.674	
25	2.329	—	-8.693	2.017	-1.165	-3.897	2.853	
26	33.000	-46.669	—	-36.807	26.944	-9.862	-52.053	
27	3.266	-4.461	—	-4.461	2.309	-0.000	-6.309	
28	11.547	-23.094	—	-13.333	6.667	-0.000	-26.667	
29	23.383	-13.500	—	-40.500	23.383	-33.750	-35.074	
30	31.000	—	-43.841	31.000	0.000	-16.047	22.694	

S-1 файл 1sDt-AnsB