

## Составная конструкция 3 тел

Определить реакции опор конструкции (в кН), состоящей из трех тел, соединенных в точке  $C$  шарниром. Размеры указаны в метрах.

Кирсанов М.Н. **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова.– М.:ФИЗМАТЛИТ, 2002.– 384 с. (с. 67.)

**Задача 16.1**

$P = 9$  кН,  $Q = 11$  кН,  $F = 2$  кН,  
 $m = 4$  кНм,  $\alpha = 30^\circ$ .

16.3

**Задача 16.2**

$P = 1$  кН,  $Q = 9$  кН,  $F = 4$  кН,  
 $m = 4$  кНм,  $\alpha = 60^\circ$ .

16.3

**Задача 16.3**

$P = 14$  кН,  $Q = 8$  кН,  $F = 2$  кН,  
 $m = 4$  кНм,  $\alpha = 30^\circ$ .

16.3

**Задача 16.4**

$P = 16$  кН,  $Q = 22$  кН,  $F = 6$  кН,  
 $m = 4$  кНм,  $\alpha = 60^\circ$ .

16.3

**Задача 16.5**

$P = 13$  кН,  $Q = 2$  кН,  $F = 8$  кН,  
 $m = 5$  кНм,  $\alpha = 30^\circ$ .

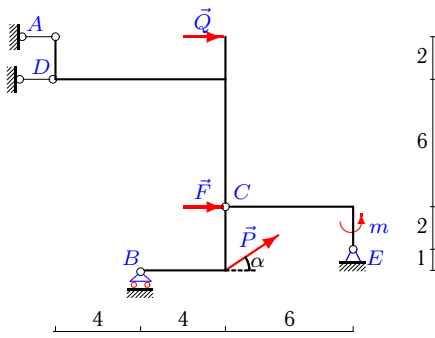
16.3

**Задача 16.6**

$P = 30$  кН,  $Q = 26$  кН,  $F = 2$  кН,  
 $m = 3$  кНм,  $\alpha = 60^\circ$ .

16.3

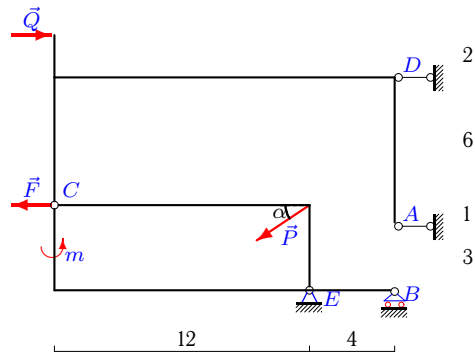
### Задача 16.7



$P = 17 \text{ кН}, Q = 22 \text{ кН}, F = 6 \text{ кН},$   
 $m = 5 \text{ кНМ}, \alpha = 30^\circ.$

16.3

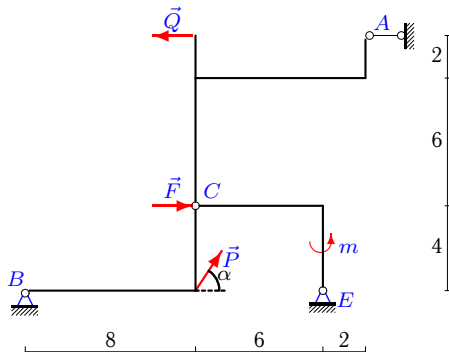
### Задача 16.8



$P = 7 \text{ кН}, Q = 9 \text{ кН}, F = 6 \text{ кН},$   
 $m = 6 \text{ кНМ}, \alpha = 30^\circ.$

16.3

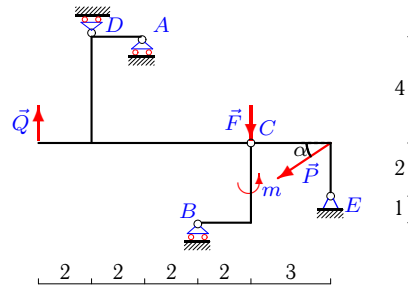
### Задача 16.9



$P = 18 \text{ кН}, Q = 2 \text{ кН}, F = 1 \text{ кН},$   
 $m = 5 \text{ кНМ}, \alpha = 60^\circ.$

16.3

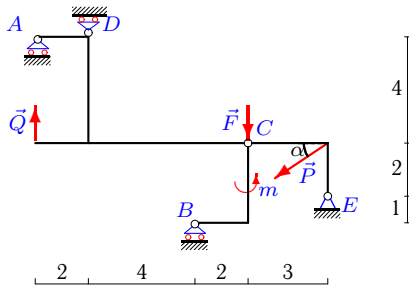
### Задача 16.10



$P = 21 \text{ кН}, Q = 22 \text{ кН}, F = 6 \text{ кН},$   
 $m = 5 \text{ кНМ}, \alpha = 30^\circ.$

16.3

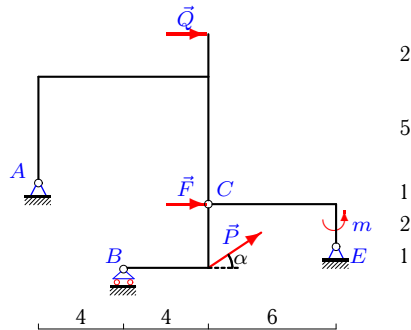
### Задача 16.11



$P = 6 \text{ кН}, Q = 30 \text{ кН}, F = 6 \text{ кН},$   
 $m = 5 \text{ кНМ}, \alpha = 30^\circ.$

16.3

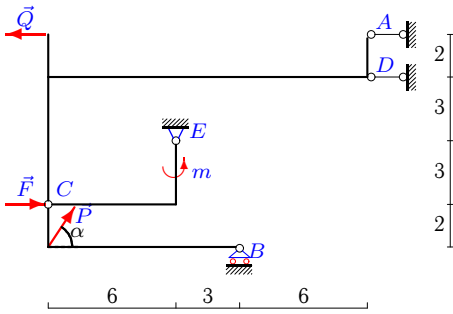
### Задача 16.12



$P = 33 \text{ кН}, Q = 18 \text{ кН}, F = 2 \text{ кН},$   
 $m = 5 \text{ кНМ}, \alpha = 30^\circ.$

16.3

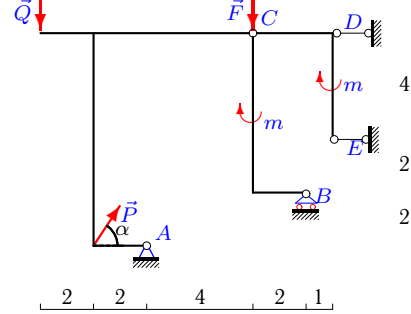
**Задача 16.13**



$P = 9 \text{ кН}, Q = 30 \text{ кН}, F = 6 \text{ кН},$   
 $m = 4 \text{ кНм}, \alpha = 60^\circ.$

16.3

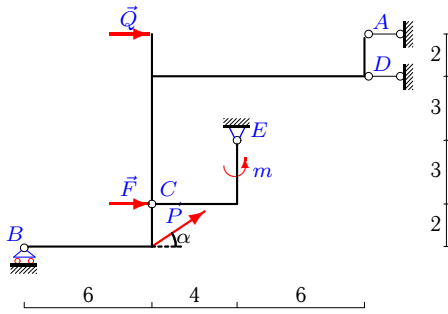
**Задача 16.14**



$P = 14 \text{ кН}, Q = 6 \text{ кН}, F = 7 \text{ кН},$   
 $m = 6 \text{ кНм}, \alpha = 60^\circ.$

16.3

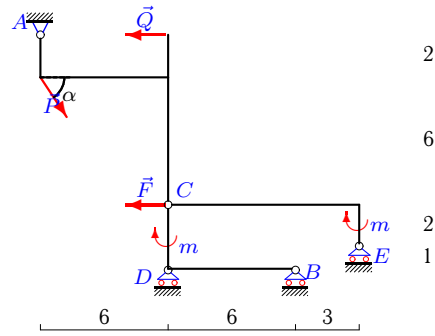
**Задача 16.15**



$P = 29 \text{ кН}, Q = 17 \text{ кН}, F = 6 \text{ кН},$   
 $m = 3 \text{ кНм}, \alpha = 30^\circ.$

16.3

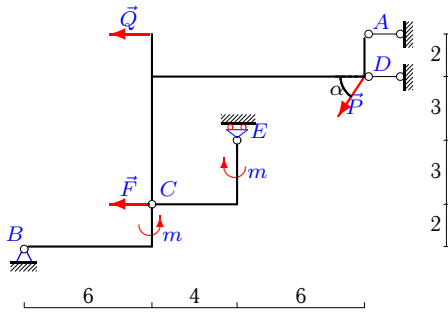
**Задача 16.16**



$P = 16 \text{ кН}, Q = 7 \text{ кН}, F = 9 \text{ кН},$   
 $m = 6 \text{ кНм}, \alpha = 60^\circ.$

16.3

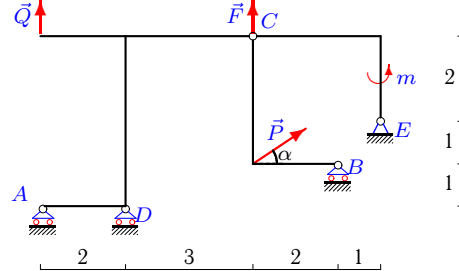
**Задача 16.17**



$P = 28 \text{ кН}, Q = 22 \text{ кН}, F = 8 \text{ кН},$   
 $m = 3 \text{ кНм}, \alpha = 60^\circ.$

16.3

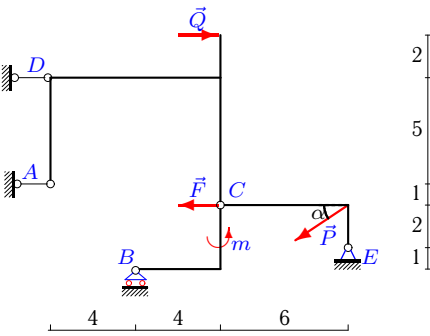
**Задача 16.18**



$P = 18 \text{ кН}, Q = 17 \text{ кН}, F = 6 \text{ кН},$   
 $m = 6 \text{ кНм}, \alpha = 30^\circ.$

16.3

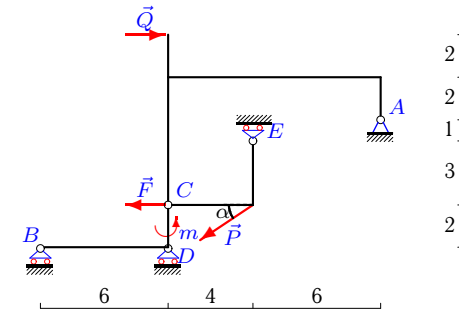
**Задача 16.19**



$P = 4 \text{ кН}, Q = 20 \text{ кН}, F = 6 \text{ кН},$   
 $m = 5 \text{ кНм}, \alpha = 30^\circ.$

16.3

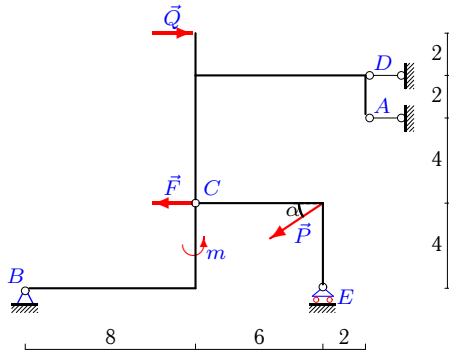
**Задача 16.20**



$P = 21 \text{ кН}, Q = 17 \text{ кН}, F = 9 \text{ кН},$   
 $m = 3 \text{ кНм}, \alpha = 30^\circ.$

16.3

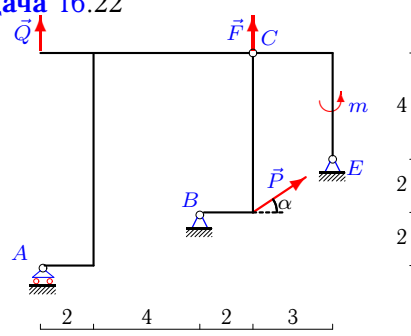
**Задача 16.21**



$P = 23 \text{ кН}, Q = 29 \text{ кН}, F = 8 \text{ кН},$   
 $m = 5 \text{ кНМ}, \alpha = 30^\circ.$

16.3

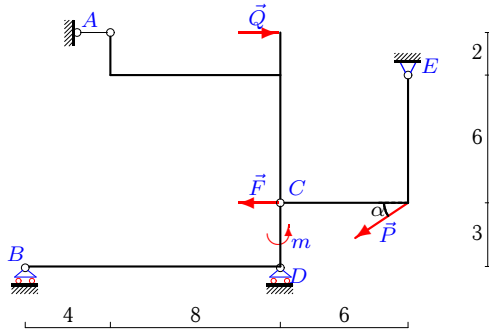
**Задача 16.22**



$P = 7 \text{ кН}, Q = 28 \text{ кН}, F = 1 \text{ кН},$   
 $m = 5 \text{ кНМ}, \alpha = 30^\circ.$

16.3

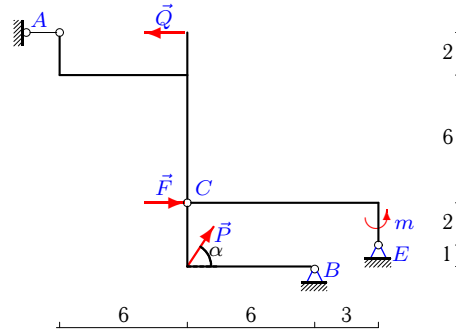
**Задача 16.23**



$P = 16 \text{ кН}, Q = 7 \text{ кН}, F = 4 \text{ кН},$   
 $m = 3 \text{ кНМ}, \alpha = 30^\circ.$

16.3

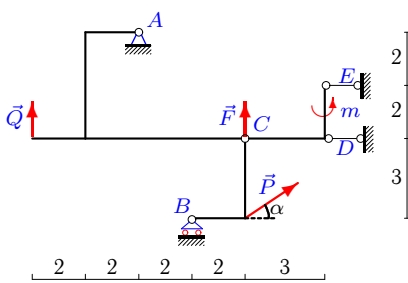
**Задача 16.24**



$P = 21 \text{ кН}, Q = 20 \text{ кН}, F = 1 \text{ кН},$   
 $m = 6 \text{ кНМ}, \alpha = 60^\circ.$

16.3

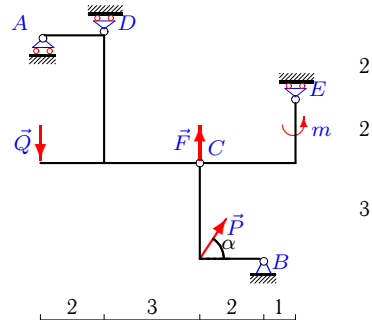
**Задача 16.25**



$P = 15 \text{ кН}, Q = 6 \text{ кН}, F = 7 \text{ кН},$   
 $m = 3 \text{ кНМ}, \alpha = 30^\circ.$

16.3

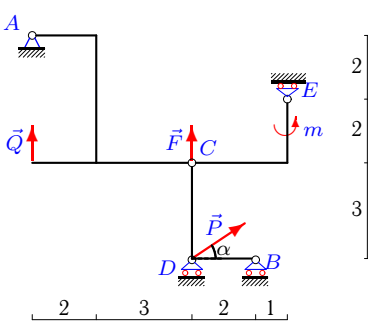
**Задача 16.26**



$P = 16 \text{ кН}, Q = 17 \text{ кН}, F = 8 \text{ кН},$   
 $m = 4 \text{ кНМ}, \alpha = 60^\circ.$

16.3

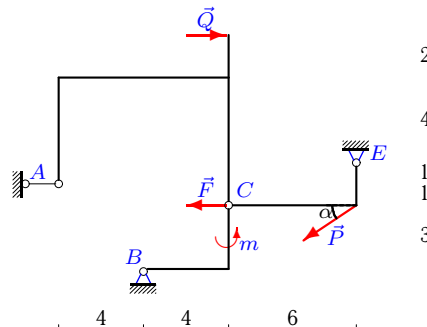
**Задача 16.27**



$P = 12 \text{ кН}, Q = 22 \text{ кН}, F = 9 \text{ кН},$   
 $m = 4 \text{ кНМ}, \alpha = 30^\circ.$

16.3

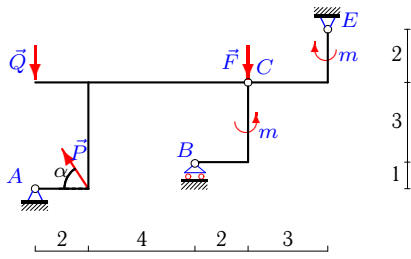
**Задача 16.28**



$P = 7 \text{ кН}, Q = 3 \text{ кН}, F = 1 \text{ кН},$   
 $m = 3 \text{ кНМ}, \alpha = 30^\circ.$

16.3

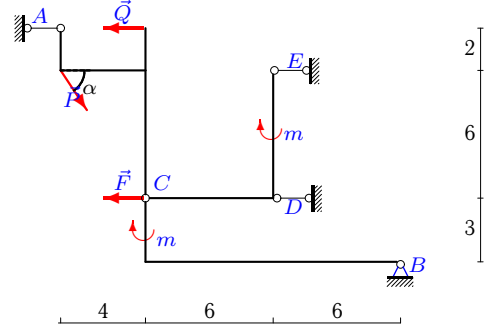
**Задача 16.29**



$P = 10 \text{ кН}$ ,  $Q = 2 \text{ кН}$ ,  $F = 2 \text{ кН}$ ,  
 $m = 3 \text{ кНм}$ ,  $\alpha = 60^\circ$ .

16.3

**Задача 16.30**



$P = 26 \text{ кН}$ ,  $Q = 8 \text{ кН}$ ,  $F = 5 \text{ кН}$ ,  
 $m = 4 \text{ кНм}$ ,  $\alpha = 60^\circ$ .

16.3

### Составная конструкция 3 тел

№	$X_A$	$Y_A$	$X_B$	$Y_B$	$X_E$	$Y_E$	$X_D$	$Y_D$
1	-10.410	3.090	-	-1.732	-10.383	-5.858	-	-
2	-	9.919	-	2.000	0.500	1.666	-	0.279
3	-15.961	-0.038	-	-18.186	3.837	1.224	-	-
4	-	10.000	-	2.000	8.000	6.666	-	-4.523
5	-63.525	-	-1.250	0.000	-	6.500	82.033	-
6	44.363	-16.776	-	0.750	-31.363	-9.954	-	-
7	208.543	-	-	11.041	56.125	-19.541	-307.391	-
8	13.874	-	-	-0.375	-1.125	3.875	-9.687	-
9	2.000	-	-22.218	-6.609	12.218	-8.979	-	-
10	-	68.873	-	2.500	18.186	-1.624	-	-75.248
11	-	-50.892	-	2.500	5.196	-0.464	-	27.856
12	-169.410	3.176	-	21.434	120.831	-41.110	-	-
13	24.734	-	-	-1.000	-12.255	-6.794	7.020	-
14	-4.968	-2.124	-	3.000	1.500	-	-3.531	-
15	-12.142	-	-	8.371	-29.495	-22.871	-6.477	-
16	8.000	4.523	-	1.000	-	0.666	-	7.666
17	83.744	-	68.996	23.498	-	0.750	-108.741	-
18	-	-16.985	-	-23.382	-15.588	8.392	-	-0.024
19	14.856	-	-	1.250	3.750	0.750	-29.142	-
20	10.186	17.674	-	0.500	-	10.500	-	-18.174
21	116.505	-	-1.250	0.000	-	11.500	-116.337	-
22	-	-28.000	-6.716	-1.961	0.653	-2.538	-	-
23	-7.000	-	-	0.250	17.856	25.856	-	-18.106
24	20.000	-	53.371	-31.935	-64.871	13.749	-	-
25	27.985	-39.985	-	19.485	1.500	-	-42.476	-
26	-	47.784	-8.000	0.000	-	-1.333	-	-51.307
27	-10.392	-13.686	-	-15.588	-	-1.333	-	-6.392
28	-24.000	-	-24.249	-17.437	52.311	20.937	-	-
29	20.990	3.500	-	1.500	-15.990	-9.660	-	-
30	9.508	-	-88.733	22.516	-0.666	-	79.891	-