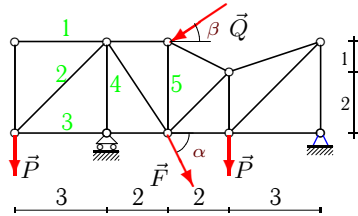


Расчет фермы

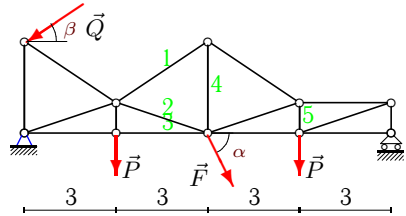
Кирсанов М.Н. **Решебник. Теоретическая механика** с. 37.

Вариант 1



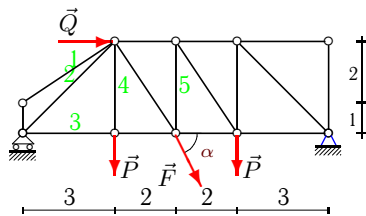
C5.
 $P = 50 \text{ кН}$,
 $Q = 30 \text{ кН}$,
 $F = 23 \text{ кН}$,
 $\alpha = 35^\circ$,
 $\beta = 45^\circ$.

Вариант 2



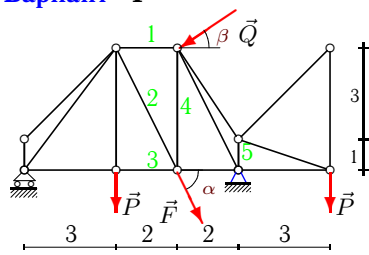
C5.
 $P = 10 \text{ кН}$,
 $Q = 60 \text{ кН}$,
 $F = 49 \text{ кН}$,
 $\alpha = 60^\circ$,
 $\beta = 15^\circ$.

Вариант 3



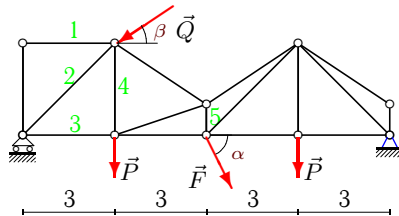
C5.
 $P = 50 \text{ кН}$,
 $Q = 80 \text{ кН}$,
 $F = 47 \text{ кН}$,
 $\alpha = 35^\circ$.

Вариант 4



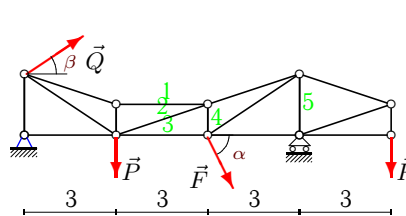
C5.
 $P = 20 \text{ кН}$,
 $Q = 70 \text{ кН}$,
 $F = 57 \text{ кН}$,
 $\alpha = 65^\circ$,
 $\beta = 45^\circ$.

Вариант 5



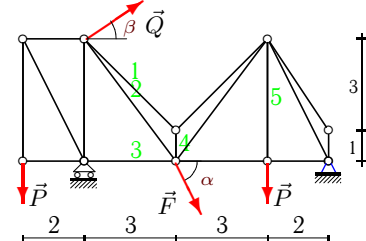
C5.
 $P = 50 \text{ кН}$,
 $Q = 90 \text{ кН}$,
 $F = 73 \text{ кН}$,
 $\alpha = 35^\circ$,
 $\beta = 30^\circ$.

Вариант 6



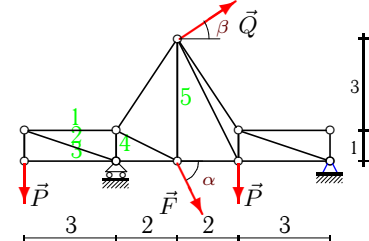
C5.
 $P = 90 \text{ кН}$,
 $Q = 30 \text{ кН}$,
 $F = 90 \text{ кН}$,
 $\alpha = 55^\circ$,
 $\beta = 15^\circ$.

Вариант 7



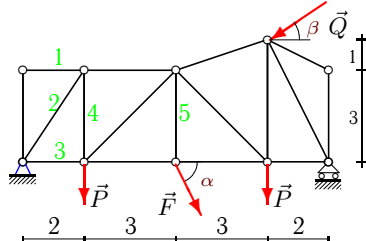
C5.
 $P = 90 \text{ кН}$,
 $Q = 80 \text{ кН}$,
 $F = 74 \text{ кН}$,
 $\alpha = 55^\circ$,
 $\beta = 45^\circ$.

Вариант 8



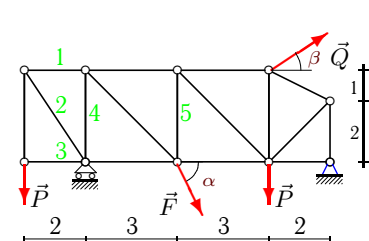
C5.
 $P = 40 \text{ кН}$,
 $Q = 40 \text{ кН}$,
 $F = 96 \text{ кН}$,
 $\alpha = 75^\circ$,
 $\beta = 45^\circ$.

Вариант 9

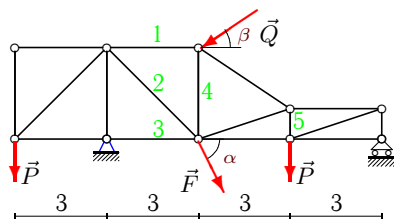


C5.
 $P = 50 \text{ кН}$,
 $Q = 60 \text{ кН}$,
 $F = 93 \text{ кН}$,
 $\alpha = 35^\circ$,
 $\beta = 15^\circ$.

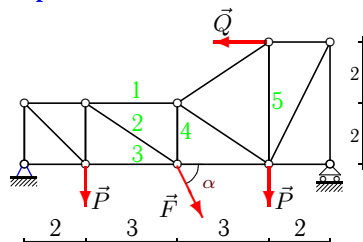
Вариант 10



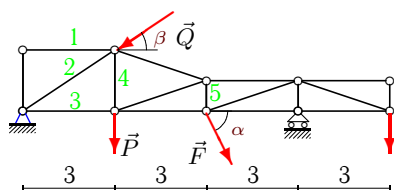
C5.
 $P = 50 \text{ кН}$,
 $Q = 60 \text{ кН}$,
 $F = 10 \text{ кН}$,
 $\alpha = 35^\circ$,
 $\beta = 45^\circ$.

Вариант 11**C5.**

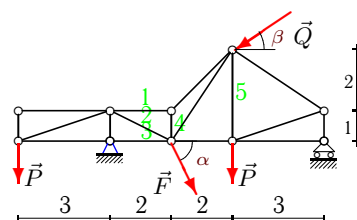
$P = 30 \text{ кН}$,
 $Q = 80 \text{ кН}$,
 $F = 11 \text{ кН}$,
 $\alpha = 70^\circ$,
 $\beta = 30^\circ$.

Вариант 12**C5.**

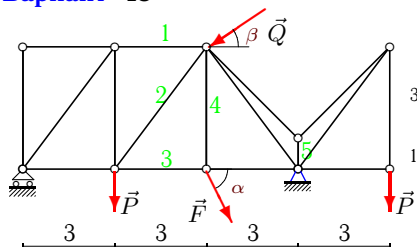
$P = 90 \text{ кН}$,
 $Q = 60 \text{ кН}$,
 $F = 12 \text{ кН}$,
 $\alpha = 55^\circ$.

Вариант 13**C5.**

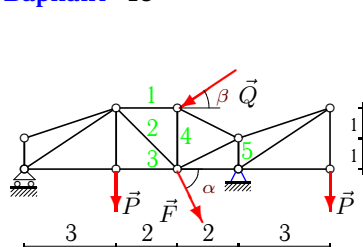
$P = 40 \text{ кН}$,
 $Q = 70 \text{ кН}$,
 $F = 13 \text{ кН}$,
 $\alpha = 75^\circ$,
 $\beta = 15^\circ$.

Вариант 14**C5.**

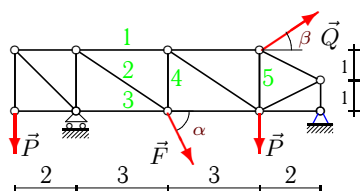
$P = 10 \text{ кН}$,
 $Q = 30 \text{ кН}$,
 $F = 14 \text{ кН}$,
 $\alpha = 60^\circ$,
 $\beta = 30^\circ$.

Вариант 15**C5.**

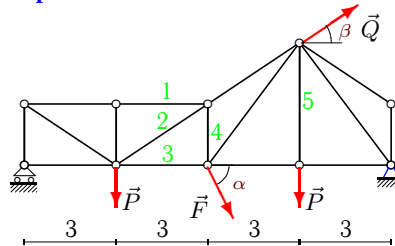
$P = 20 \text{ кН}$,
 $Q = 60 \text{ кН}$,
 $F = 15 \text{ кН}$,
 $\alpha = 65^\circ$,
 $\beta = 45^\circ$.

Вариант 16**C5.**

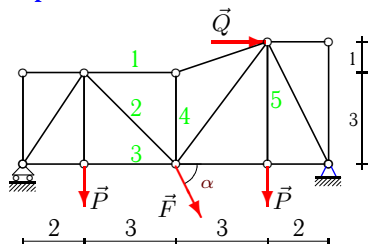
$P = 30 \text{ кН}$,
 $Q = 50 \text{ кН}$,
 $F = 16 \text{ кН}$,
 $\alpha = 70^\circ$,
 $\beta = 45^\circ$.

Вариант 17**C5.**

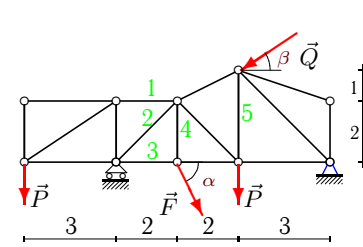
$P = 60 \text{ кН}$,
 $Q = 70 \text{ кН}$,
 $F = 17 \text{ кН}$,
 $\alpha = 40^\circ$,
 $\beta = 45^\circ$.

Вариант 18**C5.**

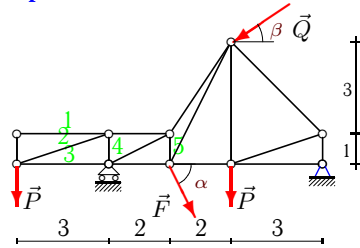
$P = 80 \text{ кН}$,
 $Q = 50 \text{ кН}$,
 $F = 18 \text{ кН}$,
 $\alpha = 50^\circ$,
 $\beta = 30^\circ$.

Вариант 19**C5.**

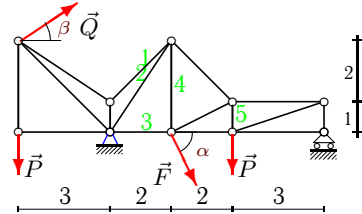
$P = 60 \text{ кН}$,
 $Q = 50 \text{ кН}$,
 $F = 19 \text{ кН}$,
 $\alpha = 40^\circ$.

Вариант 20**C5.**

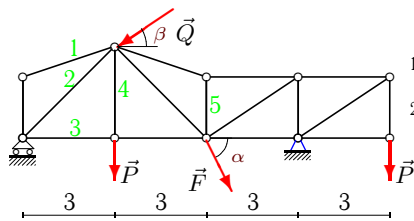
$P = 10 \text{ кН}$,
 $Q = 30 \text{ кН}$,
 $F = 20 \text{ кН}$,
 $\alpha = 60^\circ$,
 $\beta = 45^\circ$.

Вариант 21

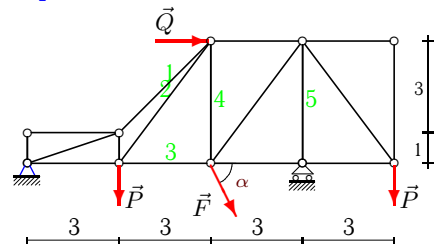
C5.
 $P = 40 \text{ кН}$,
 $Q = 50 \text{ кН}$,
 $F = 21 \text{ кН}$,
 $\alpha = 75^\circ$,
 $\beta = 45^\circ$.

Вариант 22

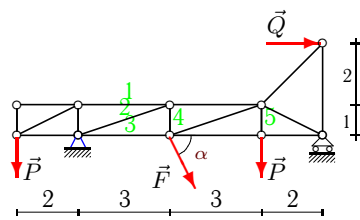
C5.
 $P = 60 \text{ кН}$,
 $Q = 90 \text{ кН}$,
 $F = 22 \text{ кН}$,
 $\alpha = 40^\circ$,
 $\beta = 30^\circ$.

Вариант 23

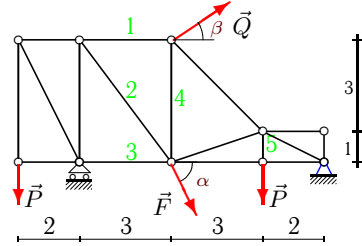
C5.
 $P = 40 \text{ кН}$,
 $Q = 90 \text{ кН}$,
 $F = 23 \text{ кН}$,
 $\alpha = 75^\circ$,
 $\beta = 45^\circ$.

Вариант 24

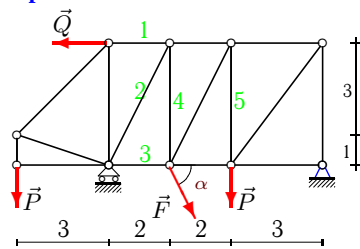
C5.
 $P = 70 \text{ кН}$,
 $Q = 60 \text{ кН}$,
 $F = 24 \text{ кН}$,
 $\alpha = 45^\circ$.

Вариант 25

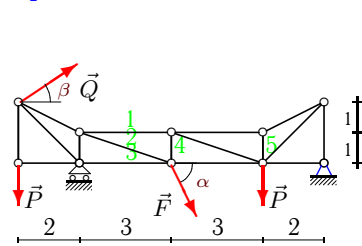
C5.
 $P = 30 \text{ кН}$,
 $Q = 30 \text{ кН}$,
 $F = 25 \text{ кН}$,
 $\alpha = 70^\circ$.

Вариант 26

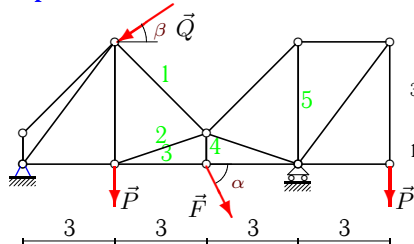
C5.
 $P = 10 \text{ кН}$,
 $Q = 70 \text{ кН}$,
 $F = 26 \text{ кН}$,
 $\alpha = 60^\circ$,
 $\beta = 45^\circ$.

Вариант 27

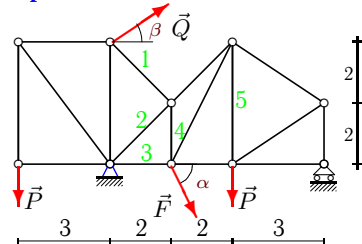
C5.
 $P = 80 \text{ кН}$,
 $Q = 80 \text{ кН}$,
 $F = 27 \text{ кН}$,
 $\alpha = 50^\circ$.

Вариант 28

C5.
 $P = 20 \text{ кН}$,
 $Q = 30 \text{ кН}$,
 $F = 28 \text{ кН}$,
 $\alpha = 65^\circ$,
 $\beta = 45^\circ$.

Вариант 29

C5.
 $P = 30 \text{ кН}$,
 $Q = 80 \text{ кН}$,
 $F = 29 \text{ кН}$,
 $\alpha = 70^\circ$,
 $\beta = 15^\circ$.

Вариант 30

C5.
 $P = 90 \text{ кН}$,
 $Q = 50 \text{ кН}$,
 $F = 30 \text{ кН}$,
 $\alpha = 55^\circ$,
 $\beta = 30^\circ$.

Ответы

	X_A	Y_A	R_B	S_1	S_2	S_3	S_4	S_5
1	2.373	7.882	126.524	0.000	70.711	-50.000	-126.524	-31.312
2	33.456	61.236	16.729	-28.192	63.461	-12.247	31.277	-6.729
3	-118.500	87.479	39.479	0.000	-55.832	39.479	50.000	37.479
4	25.408	81.114	60.043	-65.054	44.770	45.033	11.616	70.000
5	18.144	62.700	124.171	0.000	-175.604	124.171	109.990	-121.629
6	-80.600	40.370	205.589	-202.361	132.389	128.388	-67.454	-160.589
7	-99.013	96.016	88.033	-297.096	330.850	-45.000	-420.157	90.000
8	-53.131	40.289	104.155	120.000	-126.491	0.000	-64.155	31.690
9	-18.226	102.959	65.912	0.000	-123.742	86.865	102.959	53.343
10	-50.618	11.241	52.068	33.333	-60.093	0.000	-2.068	3.667
11	65.520	106.652	3.685	-46.652	108.402	-95.520	-55.087	26.315
12	53.117	118.915	70.915	-162.287	52.127	65.798	-19.085	63.638
13	64.250	44.623	66.052	0.000	-80.445	2.684	26.279	-13.495
14	18.981	44.795	2.329	-39.590	77.804	-48.981	-39.590	9.224
15	36.087	51.825	44.197	-33.147	-30.246	51.295	13.595	120.000
16	29.883	81.606	28.785	-41.961	-1.719	43.177	-32.052	-21.606
17	-62.520	9.349	72.081	41.879	21.779	-60.000	-1.153	54.172
18	-54.871	82.578	66.211	-99.316	24.859	78.632	-66.211	80.000
19	-64.555	86.106	46.106	-16.844	-19.648	30.738	-5.615	60.000
20	11.213	9.408	49.126	15.000	-55.332	24.126	17.321	3.505
21	29.920	11.510	124.130	0.000	126.491	-120.000	-40.000	11.740
22	-94.795	23.840	65.301	-267.042	216.317	85.689	77.676	-5.301
23	57.687	81.478	84.378	0.000	-119.329	84.378	40.000	-0.739
24	-76.971	2.324	154.647	-9.858	93.309	27.956	-67.676	-154.647
25	-38.551	48.433	35.060	60.000	-58.289	33.849	18.433	30.000
26	-62.497	19.631	-26.612	32.459	-45.765	-5.000	66.536	10.000
27	62.645	-28.376	209.059	140.000	-144.293	4.530	129.059	108.376
28	-33.047	30.123	14.041	-90.614	48.237	23.640	10.123	-30.123
29	67.355	67.231	40.725	37.972	32.649	-47.906	27.251	-22.500
30	-60.509	134.953	44.622	34.222	-64.706	38.762	48.397	67.689