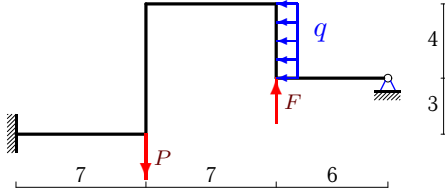


Статически неопределимая рама

Найти реакции опор рамы.

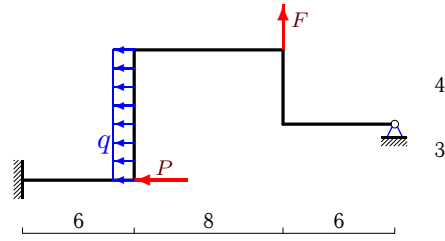
Задача 25.1



$P = 14 \text{ кН}, F = 12 \text{ кН}, q = 2 \text{ кН/м}.$

25.1

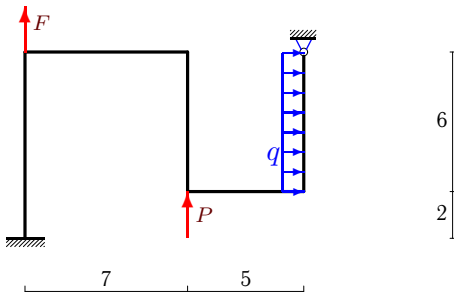
Задача 25.2



$P = 8 \text{ кН}, F = 8 \text{ кН}, q = 6 \text{ кН/м}.$

25.1

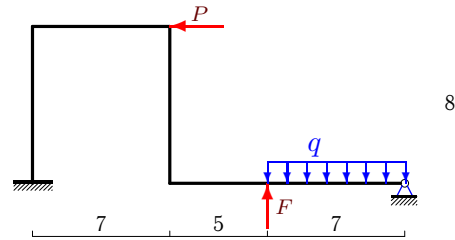
Задача 25.3



$P = 30 \text{ кН}, F = 12 \text{ кН}, q = 3 \text{ кН/м}.$

25.1

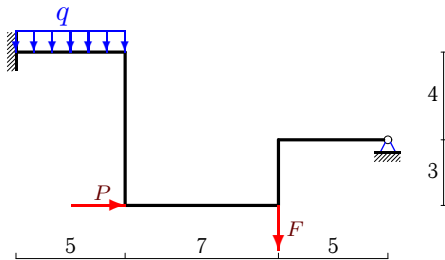
Задача 25.4



$P = 24 \text{ кН}, F = 12 \text{ кН}, q = 6 \text{ кН/м}.$

25.1

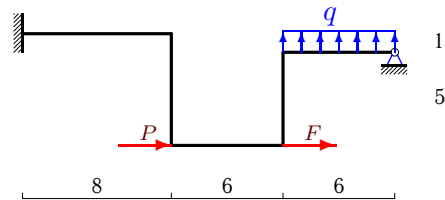
Задача 25.5



$P = 14 \text{ кН}, F = 12 \text{ кН}, q = 6 \text{ кН/м}.$

25.1

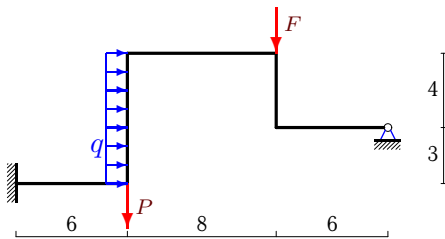
Задача 25.6



$P = 24 \text{ кН}, F = 15 \text{ кН}, q = 6 \text{ кН/м}.$

25.1

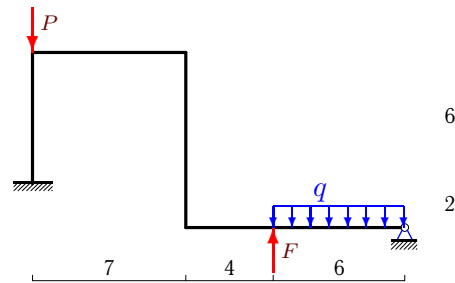
Задача 25.7



$P = 16 \text{ кН}, F = 12 \text{ кН}, q = 3 \text{ кН/м}.$

25.1

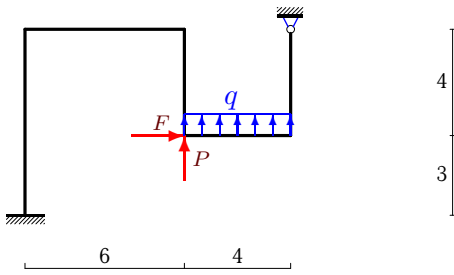
Задача 25.8



$P = 24 \text{ кН}, F = 6 \text{ кН}, q = 3 \text{ кН/м}.$

25.1

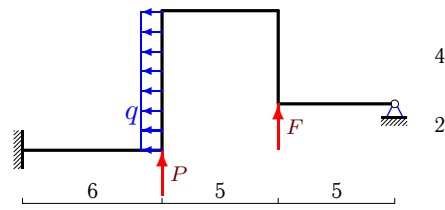
Задача 25.9



$P = 30 \text{ кН}, F = 15 \text{ кН}, q = 1 \text{ кН/м}.$

25.1

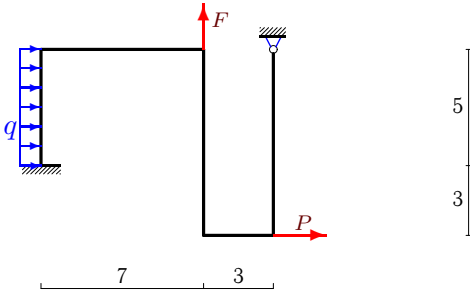
Задача 25.10



$P = 8 \text{ кН}, F = 5 \text{ кН}, q = 2 \text{ кН/м}.$

25.1

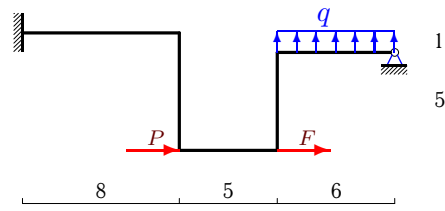
Задача 25.11



$P = 32 \text{ кН}, F = 12 \text{ кН}, q = 6 \text{ кН/м}.$

25.1

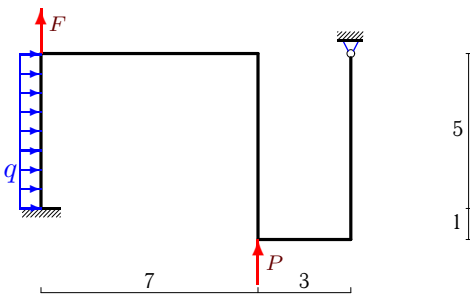
Задача 25.12



$P = 21 \text{ кН}, F = 15 \text{ кН}, q = 4 \text{ кН/м}.$

25.1

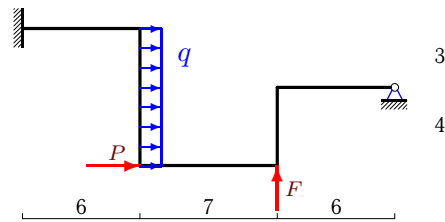
Задача 25.13



$P = 18 \text{ кН}, F = 10 \text{ кН}, q = 5 \text{ кН/м}.$

25.1

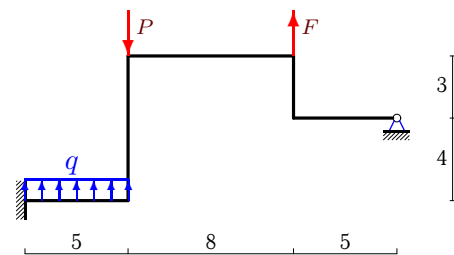
Задача 25.14



$P = 8 \text{ кН}, F = 6 \text{ кН}, q = 2 \text{ кН/м}.$

25.1

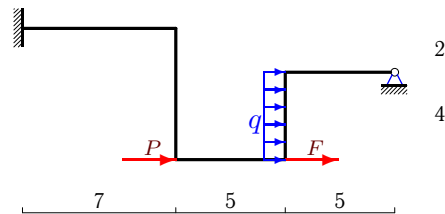
Задача 25.15



$P = 8 \text{ кН}, F = 9 \text{ кН}, q = 3 \text{ кН/м}.$

25.1

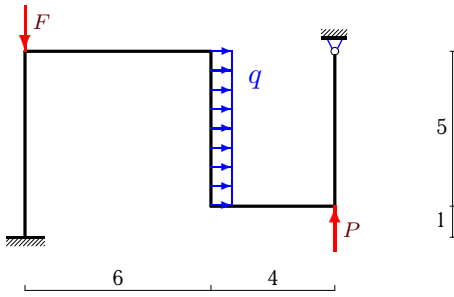
Задача 25.16



$P = 21 \text{ кН}, F = 5 \text{ кН}, q = 5 \text{ кН/м}.$

25.1

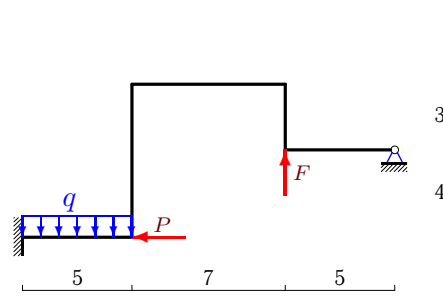
Задача 25.17



$P = 42 \text{ кН}, F = 5 \text{ кН}, q = 2 \text{ кН/м}.$

25.1

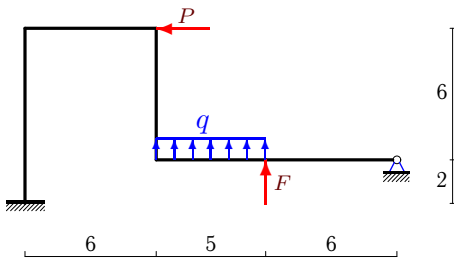
Задача 25.18



$P = 7 \text{ кН}, F = 18 \text{ кН}, q = 4 \text{ кН/м}.$

25.1

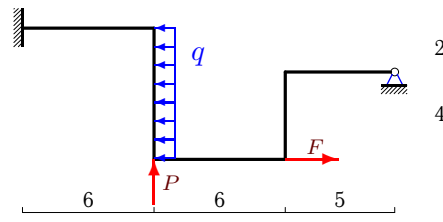
Задача 25.19



$P = 16 \text{ кН}, F = 9 \text{ кН}, q = 3 \text{ кН/м}.$

25.1

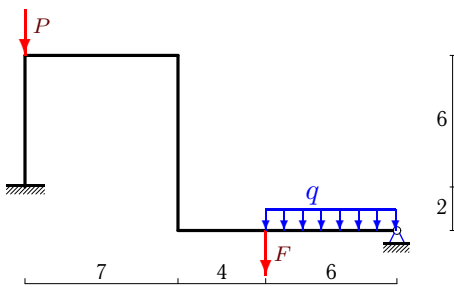
Задача 25.20



$P = 8 \text{ кН}, F = 12 \text{ кН}, q = 6 \text{ кН/м}.$

25.1

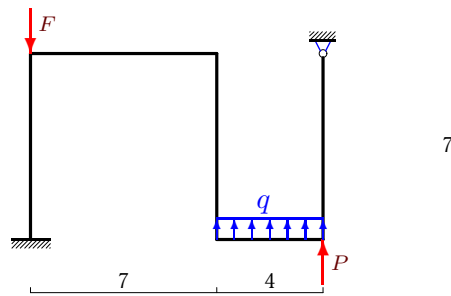
Задача 25.21



$P = 24 \text{ кН}, F = 6 \text{ кН}, q = 6 \text{ кН/м}.$

25.1

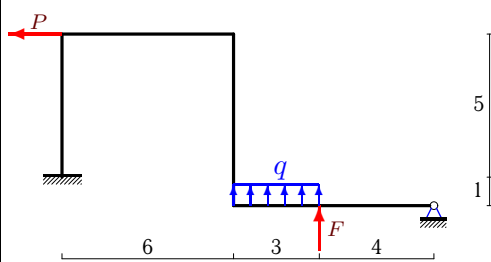
Задача 25.22



$P = 21 \text{ кН}, F = 12 \text{ кН}, q = 4 \text{ кН/м}.$

25.1

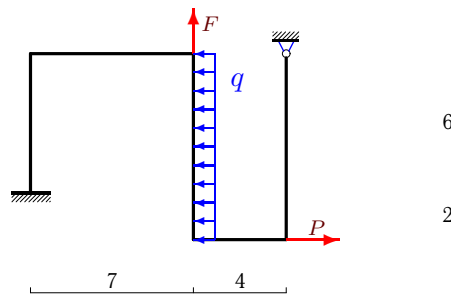
Задача 25.23



$P = 24 \text{ кН}, F = 8 \text{ кН}, q = 6 \text{ кН/м}.$

25.1

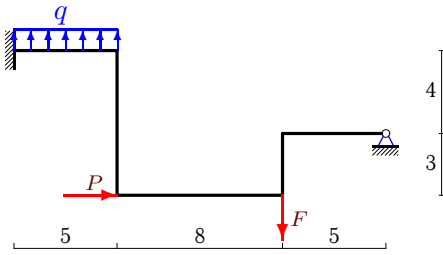
Задача 25.24



$P = 40 \text{ кН}, F = 11 \text{ кН}, q = 3 \text{ кН/м}.$

25.1

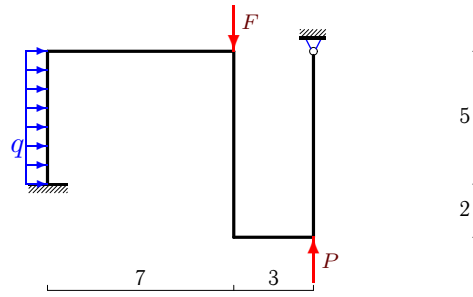
Задача 25.25



$P = 8 \text{ кН}, F = 6 \text{ кН}, q = 3 \text{ кН/м}.$

25.1

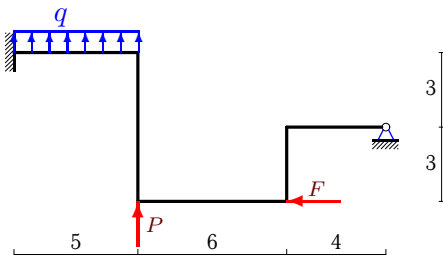
Задача 25.26



$P = 28 \text{ кН}, F = 12 \text{ кН}, q = 6 \text{ кН/м}.$

25.1

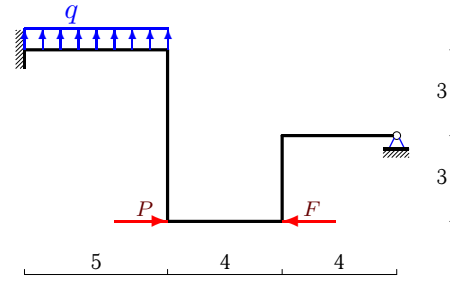
Задача 25.27



$P = 8 \text{ кН}, F = 10 \text{ кН}, q = 3 \text{ кН/м}.$

25.1

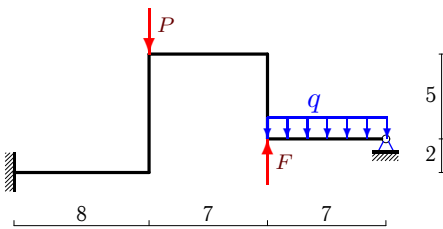
Задача 25.28



$P = 12 \text{ кН}, F = 10 \text{ кН}, q = 2 \text{ кН/м}.$

25.1

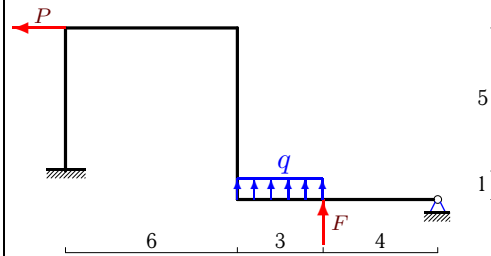
Задача 25.29



$P = 7 \text{ кН}, F = 18 \text{ кН}, q = 4 \text{ кН/м}.$

25.1

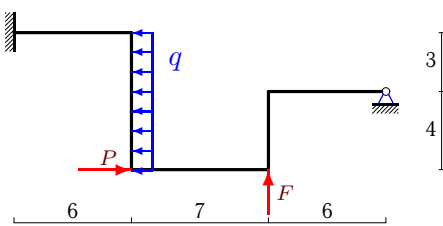
Задача 25.30



$P = 24 \text{ кН}, F = 8 \text{ кН}, q = 6 \text{ кН/м}.$

25.1

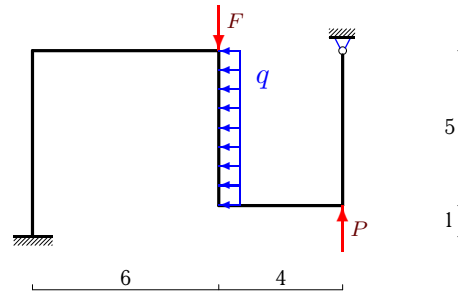
Задача 25.31



$P = 7 \text{ кН}, F = 6 \text{ кН}, q = 4 \text{ кН/м}.$

25.1

Задача 25.32



$P = 42 \text{ кН}, F = 10 \text{ кН}, q = 6 \text{ кН/м}.$

25.1

Статически неопределимая рама

	X_A	Y_A	M_A	X_B	Y_B	δ_{11}	δ_{12}	δ_{22}	Δ_1	Δ_2
1	0.22	8.07	34.73	7.78	-6.07	320.42	30.60	9.98	-1131.90	-353.38
2	30.84	1.62	-9.21	19.16	-9.62	361.08	36.92	10.46	-10794.20	-1042.19
3	-2.26	-22.45	-11.33	-15.74	-19.55	597.33	58.58	13.04	2011.33	279.92
4	13.09	9.79	-68.92	10.91	20.21	789.33	97.89	17.52	-3588.84	-74.06
5	-9.60	38.47	78.54	-4.40	3.53	271.31	-29.95	9.41	4956.63	-1026.89
6	-6.16	4.83	3.54	-32.84	-40.83	287.04	-27.33	9.28	1863.73	-201.08
7	-3.52	17.37	72.44	-17.48	10.63	361.08	36.92	10.46	-1404.96	-627.71
8	-0.71	25.69	9.35	0.71	10.31	471.23	64.42	14.43	-266.60	-89.06
9	-4.00	-9.25	3.47	-11.00	-24.75	326.09	45.91	10.97	1144.69	145.55
10	2.86	-7.37	-30.58	9.14	-5.63	205.10	22.01	8.07	87.34	183.86
11	-56.07	21.41	199.47	-5.93	-33.41	544.33	19.57	9.05	26619.75	-708.67
12	-7.78	6.83	14.01	-28.22	-30.83	257.04	-24.61	8.84	2344.95	-315.37
13	-21.66	-17.49	24.91	-3.34	-10.51	309.50	23.77	8.87	6111.39	293.69
14	-8.08	1.30	-2.58	-13.92	-7.30	330.33	-33.79	10.01	2581.08	-247.10
15	-2.83	-10.99	-13.06	2.83	-5.01	297.46	33.03	9.88	1274.69	222.74
16	-11.78	12.19	39.73	-34.22	-12.19	200.04	-19.77	8.09	3140.85	-554.11
17	-7.48	6.58	35.64	-2.52	-43.58	296.13	33.80	10.13	1010.42	-108.33
18	1.62	11.34	14.32	5.38	-9.34	271.31	29.95	9.41	-868.51	-183.36
19	6.67	-9.22	-84.55	9.33	-14.78	656.56	89.65	16.18	3202.80	770.22
20	22.12	-8.45	-23.40	1.88	0.45	230.02	-24.70	8.52	-5666.51	745.84
21	-3.69	36.54	61.85	3.69	29.46	471.23	64.42	14.43	-2247.11	-655.27
22	1.41	8.68	-14.38	-1.41	-33.68	568.02	42.65	11.59	-186.98	106.62
23	15.72	-7.83	-99.10	8.28	-18.17	260.97	43.81	11.07	239.37	408.63
24	-9.99	17.69	74.56	-6.01	-28.69	629.96	28.89	10.72	4138.96	-510.98
25	-2.83	-10.24	-17.11	-5.17	1.24	297.46	-33.03	9.88	275.87	75.72
26	-31.28	3.08	76.16	1.28	-19.08	411.42	21.82	8.96	11206.90	-0.27
27	5.92	-24.79	-56.65	4.08	1.79	179.52	-20.74	7.88	-2237.11	569.12
28	0.49	-8.94	-15.69	-2.49	-1.06	138.85	-15.48	6.89	-311.09	115.68
29	0.49	4.22	21.88	-0.49	12.78	392.79	35.62	10.67	-973.11	-251.10
30	15.72	-7.83	-99.10	8.28	-18.17	260.97	43.81	11.07	239.37	408.63
31	18.26	-4.45	-7.71	2.74	-1.55	330.33	-33.79	10.01	-6290.84	694.04
32	21.01	-0.08	-91.88	8.99	-31.92	296.13	33.80	10.13	-3115.25	221.00