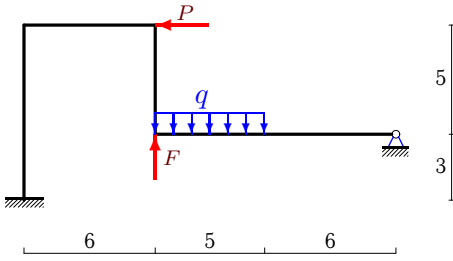


Статически неопределимая рама

Найти реакции опор рамы.

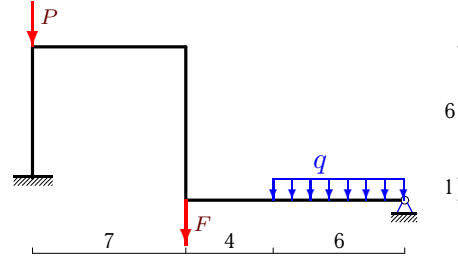
Задача 25.1



$P = 21 \text{ кН}$, $F = 10 \text{ кН}$, $q = 4 \text{ кН/м}$.

25.2

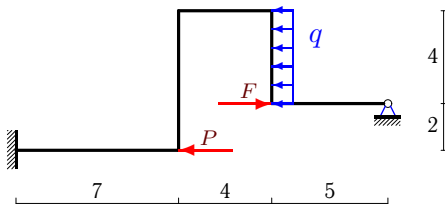
Задача 25.2



$P = 21 \text{ кН}$, $F = 6 \text{ кН}$, $q = 2 \text{ кН/м}$.

25.2

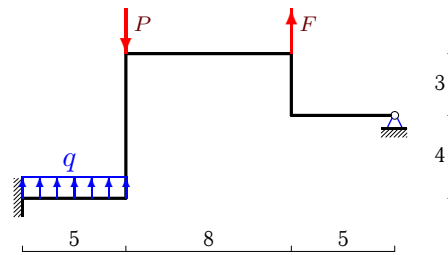
Задача 25.3



$P = 6 \text{ кН}$, $F = 15 \text{ кН}$, $q = 1 \text{ кН/м}$.

25.2

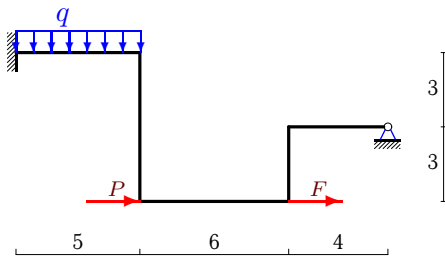
Задача 25.4



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

25.2

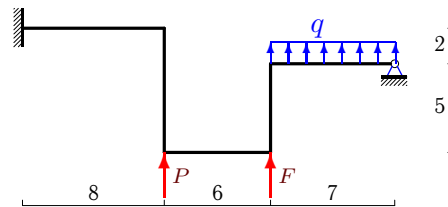
Задача 25.5



$P = 8 \text{ кН}$, $F = 15 \text{ кН}$, $q = 9 \text{ кН/м}$.

25.2

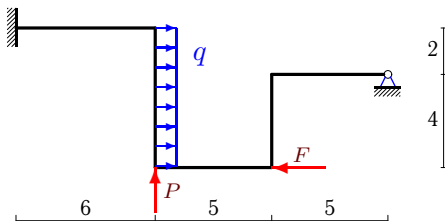
Задача 25.6



$P = 6 \text{ кН}$, $F = 12 \text{ кН}$, $q = 1 \text{ кН/м}$.

25.2

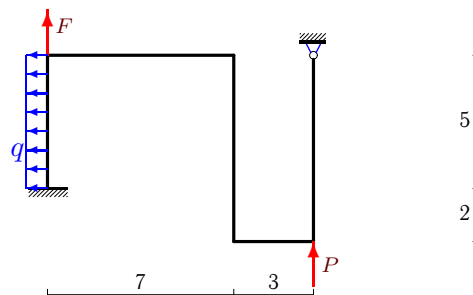
Задача 25.7



$P = 21 \text{ кН}$, $F = 10 \text{ кН}$, $q = 2 \text{ кН/м}$.

25.2

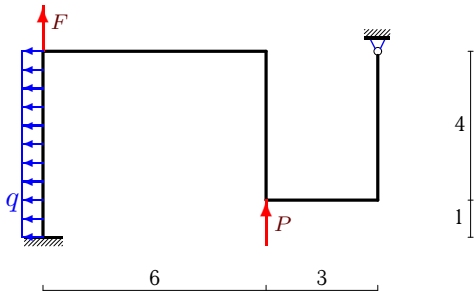
Задача 25.8



$P = 21 \text{ кН}$, $F = 18 \text{ кН}$, $q = 2 \text{ кН/м}$.

25.2

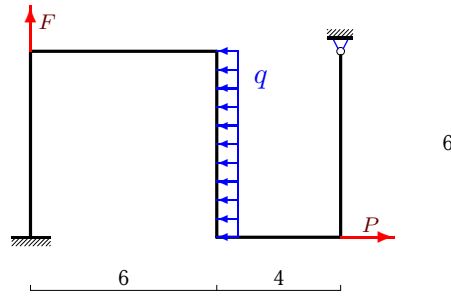
Задача 25.9



$P = 30 \text{ кН}, F = 10 \text{ кН}, q = 2 \text{ кН/м}.$

25.2

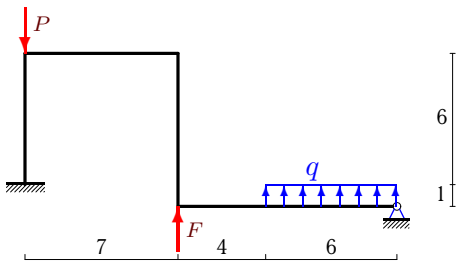
Задача 25.10



$P = 48 \text{ кН}, F = 10 \text{ кН}, q = 3 \text{ кН/м}.$

25.2

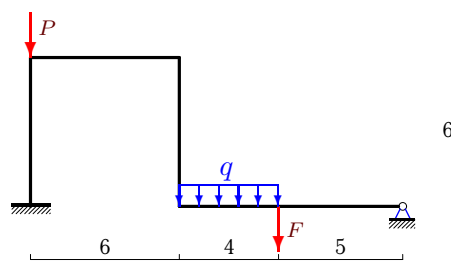
Задача 25.11



$P = 28 \text{ кН}, F = 6 \text{ кН}, q = 2 \text{ кН/м}.$

25.2

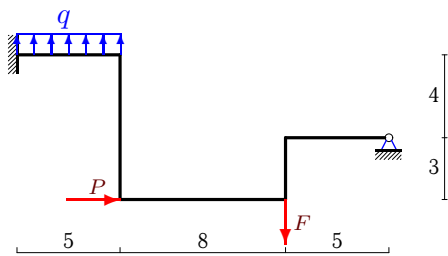
Задача 25.12



$P = 24 \text{ кН}, F = 5 \text{ кН}, q = 5 \text{ кН/м}.$

25.2

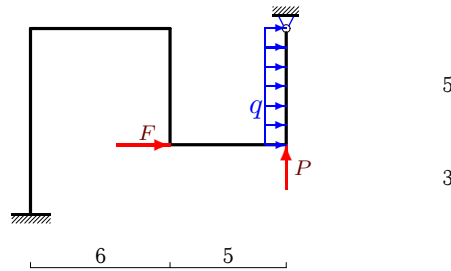
Задача 25.13



$P = 16 \text{ кН}, F = 6 \text{ кН}, q = 6 \text{ кН/м}.$

25.2

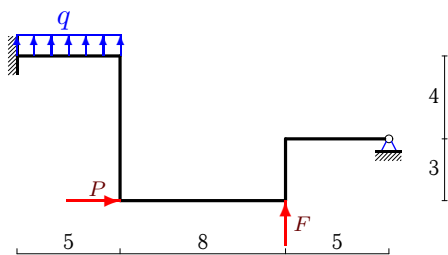
Задача 25.14



$P = 42 \text{ кН}, F = 10 \text{ кН}, q = 5 \text{ кН/м}.$

25.2

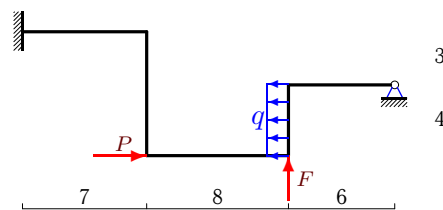
Задача 25.15



$P = 8 \text{ кН}, F = 12 \text{ кН}, q = 3 \text{ кН/м}.$

25.2

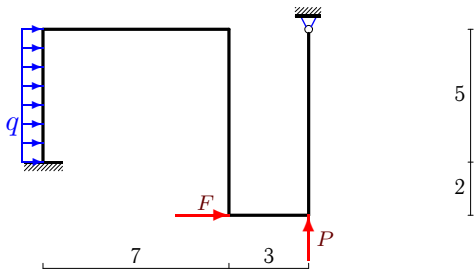
Задача 25.16



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

25.2

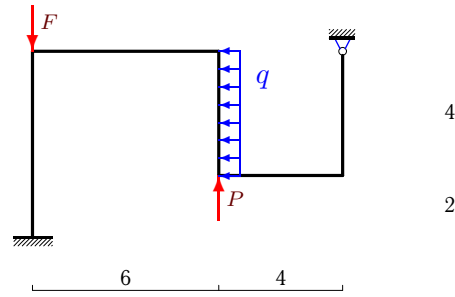
Задача 25.17



$P = 28 \text{ кН}, F = 12 \text{ кН}, q = 4 \text{ кН/м}.$

25.2

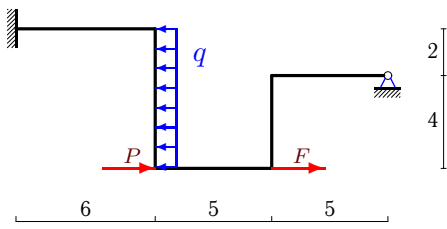
Задача 25.18



$P = 36 \text{ кН}, F = 10 \text{ кН}, q = 5 \text{ кН/м}.$

25.2

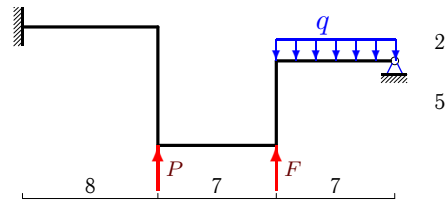
Задача 25.19



$P = 14 \text{ кН}, F = 10 \text{ кН}, q = 5 \text{ кН/м}.$

25.2

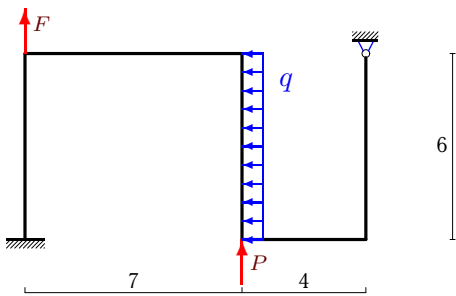
Задача 25.20



$P = 7 \text{ кН}, F = 6 \text{ кН}, q = 2 \text{ кН/м}.$

25.2

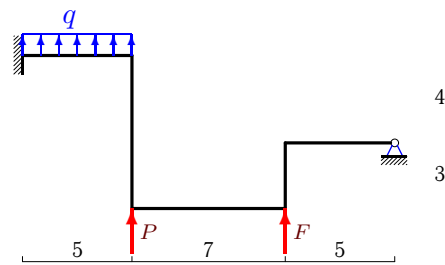
Задача 25.21



$P = 24 \text{ кН}, F = 10 \text{ кН}, q = 5 \text{ кН/м}.$

25.2

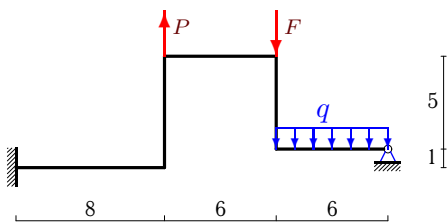
Задача 25.22



$P = 14 \text{ кН}, F = 6 \text{ кН}, q = 2 \text{ кН/м}.$

25.2

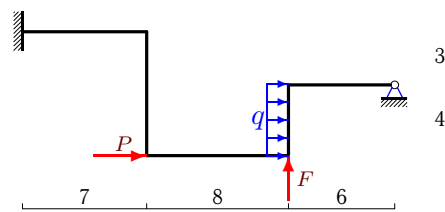
Задача 25.23



$P = 12 \text{ кН}, F = 10 \text{ кН}, q = 9 \text{ кН/м}.$

25.2

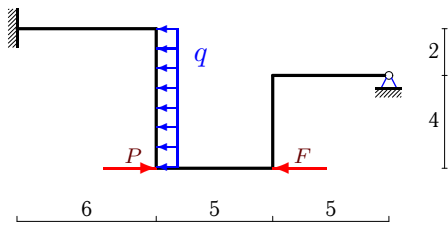
Задача 25.24



$P = 9 \text{ кН}, F = 10 \text{ кН}, q = 5 \text{ кН/м}.$

25.2

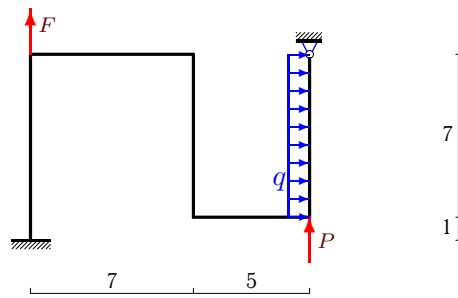
Задача 25.25



$P = 21 \text{ кН}, F = 10 \text{ кН}, q = 6 \text{ кН/м}.$

25.2

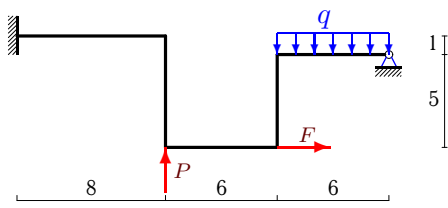
Задача 25.26



$P = 35 \text{ кН}, F = 6 \text{ кН}, q = 4 \text{ кН/м}.$

25.2

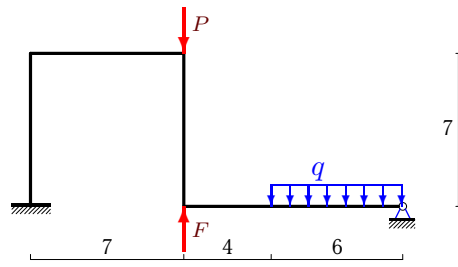
Задача 25.27



$P = 24 \text{ кН}, F = 5 \text{ кН}, q = 6 \text{ кН/м}.$

25.2

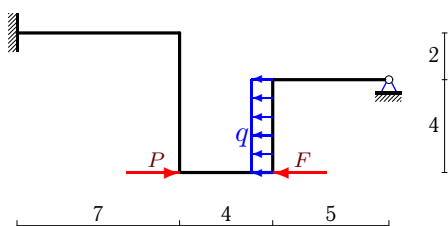
Задача 25.28



$P = 21 \text{ кН}, F = 12 \text{ кН}, q = 6 \text{ кН/м}.$

25.2

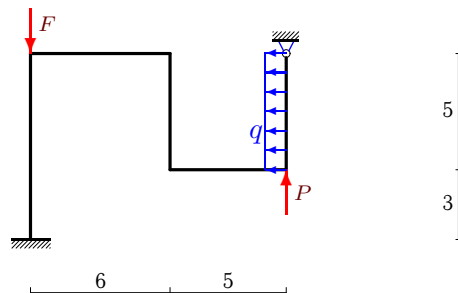
Задача 25.29



$P = 12 \text{ кН}, F = 5 \text{ кН}, q = 1 \text{ кН/м}.$

25.2

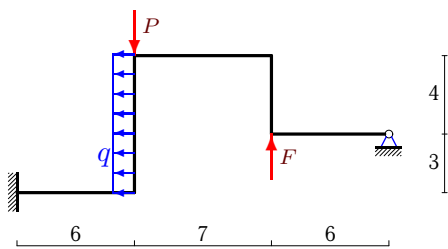
Задача 25.30



$P = 28 \text{ кН}, F = 10 \text{ кН}, q = 4 \text{ кН/м}.$

25.2

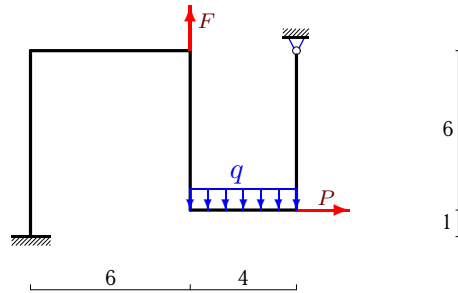
Задача 25.31



$P = 14 \text{ кН}, F = 8 \text{ кН}, q = 4 \text{ кН/м}.$

25.2

Задача 25.32



$P = 32 \text{ кН}, F = 10 \text{ кН}, q = 3 \text{ кН/м}.$

25.2

Статически неопределимая рама

	X_A	Y_A	M_A	X_B	Y_B	δ_{11}	δ_{12}	δ_{22}	Δ_1	Δ_2
1	6.39	9.15	-28.61	14.61	0.85	628.94	88.07	15.76	-1500.08	-112.04
2	-0.62	28.39	29.03	0.62	10.61	430.78	63.23	14.09	-1567.35	-369.59
3	6.69	0.74	2.44	-11.69	-0.74	175.57	17.18	7.62	-1216.15	-133.53
4	-5.14	-26.99	-44.22	5.14	-7.01	297.46	33.03	9.88	2989.69	606.80
5	-9.62	50.42	95.90	-13.38	-5.42	179.52	-20.74	7.88	3715.96	-955.21
6	10.00	-12.81	-62.60	-10.00	-12.19	356.95	-32.48	10.24	-5604.09	965.80
7	2.21	-19.68	-72.39	-4.21	-1.32	205.10	-22.01	8.07	-2046.35	632.64
8	9.86	-17.57	-20.02	0.14	-21.43	411.42	21.82	8.96	-3620.83	-35.75
9	13.71	-21.24	-54.77	-3.71	-18.76	171.78	25.06	8.44	-983.47	118.89
10	-20.29	13.71	124.84	-9.71	-23.71	370.56	31.76	10.29	3554.64	-640.56
11	0.62	20.61	-29.03	-0.62	-10.61	430.78	63.23	14.09	1567.35	369.59
12	-0.72	38.05	45.78	0.72	10.95	360.00	57.60	13.16	-2376.00	-560.71
13	-3.31	-23.04	-40.87	-12.69	-0.96	297.46	-33.03	9.88	-366.22	294.68
14	-12.24	8.90	83.37	-22.76	-50.90	497.96	58.23	12.70	1242.35	-345.71
15	4.22	-17.91	-37.05	-12.22	-9.09	297.46	-33.03	9.88	-2478.02	505.44
16	1.62	-1.24	-7.09	-5.62	-7.76	350.75	-33.67	10.44	-806.14	128.49
17	-29.87	7.88	94.13	-2.13	-35.88	411.42	21.82	8.96	10236.27	-191.98
18	17.60	-9.09	-112.50	2.40	-16.91	244.91	35.44	9.97	-323.63	498.24
19	11.96	3.53	14.41	-5.96	-3.53	205.10	-22.01	8.07	-2135.69	146.97
20	2.14	-5.50	-25.64	-2.14	6.50	392.79	-35.62	10.67	-1752.81	349.81
21	27.87	-26.05	-157.78	2.13	-7.95	389.65	33.85	10.46	-5519.60	706.88
22	6.31	-25.72	-68.91	-6.31	-4.28	271.31	-29.95	9.41	-3777.07	837.82
23	13.80	6.29	34.01	-13.80	45.71	287.04	27.33	9.28	-4891.82	-692.72
24	-0.70	0.80	-1.30	-28.30	-10.80	350.75	-33.67	10.44	203.37	-10.14
25	19.70	-1.91	0.76	5.30	1.91	205.10	-22.01	8.07	-4023.17	427.42
26	-10.37	1.22	71.56	-17.63	-42.22	698.11	56.22	13.22	3214.94	-362.74
27	-1.07	-10.00	-46.11	-3.93	22.00	287.04	-27.33	9.28	-952.38	398.47
28	-0.45	14.86	54.64	0.45	30.14	571.67	77.82	15.09	-3994.94	-789.42
29	-1.46	1.80	5.93	-1.54	-1.80	175.57	-17.18	7.62	357.77	-70.26
30	5.64	6.11	-37.97	14.36	-24.11	497.96	58.23	12.70	-598.45	153.65
31	17.78	12.60	38.02	10.22	-6.60	330.33	33.79	10.01	-7156.58	-981.23
32	-21.38	15.60	129.65	-10.62	-13.60	444.71	42.55	11.29	3992.32	-554.24