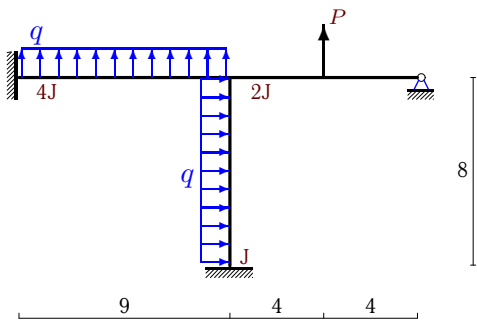


Статически неопределимая рама (метод перемещений, 2)

Построить эпюру моментов в раме.

Задача 33.1.

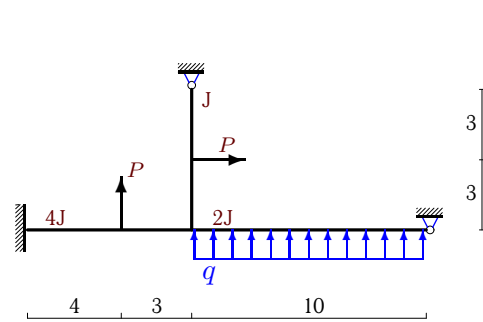
22



$q = 11 \text{ кН/м}, P = 11 \text{ кН},$

Задача 33.2.

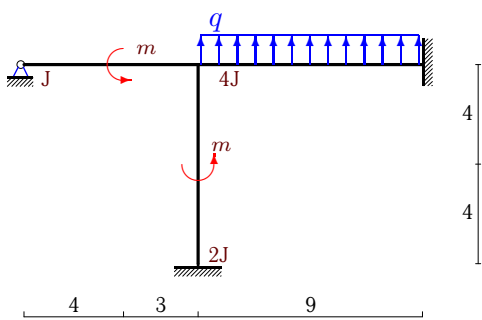
22



$q = 9 \text{ кН/м}, P = 11 \text{ кН},$

Задача 33.3.

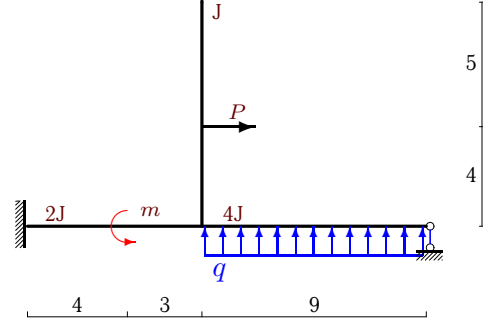
22



$q = 10 \text{ кН/м}, m = 29 \text{ кНм}.$

Задача 33.4.

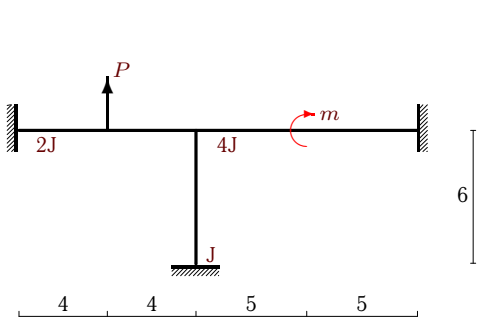
22



$q = 8 \text{ кН/м}, P = 10 \text{ кН}, m = 32 \text{ кНм}.$

Задача 33.5.

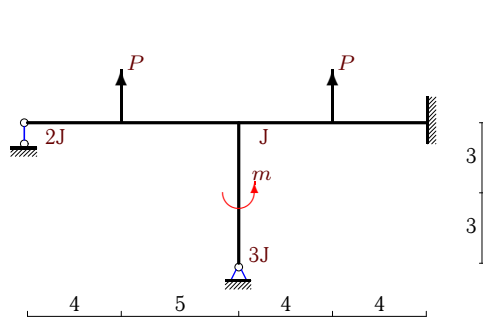
22



$P = 10 \text{ кН}, m = 29 \text{ кНм}.$

Задача 33.6.

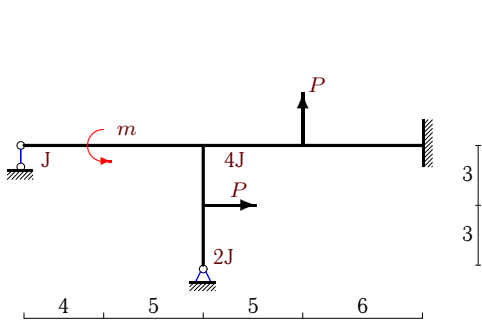
22



$P = 10 \text{ кН}, m = 30 \text{ кНм}.$

Задача 33.7.

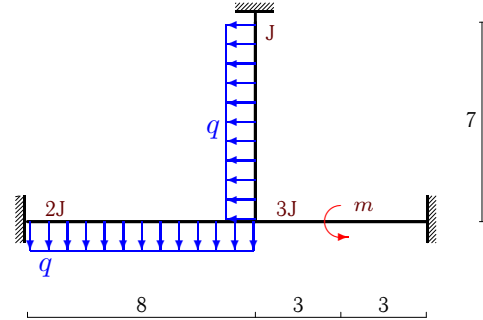
22



$P = 13 \text{ кН}, m = 31 \text{ кНм}.$

Задача 33.8.

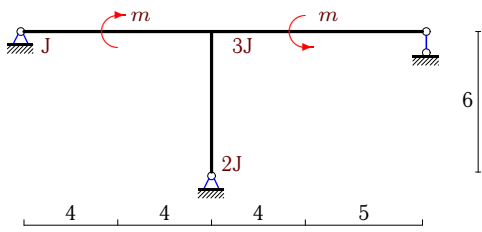
22



$q = 6 \text{ кН/м}, m = 27 \text{ кНм}.$

Задача 33.9.

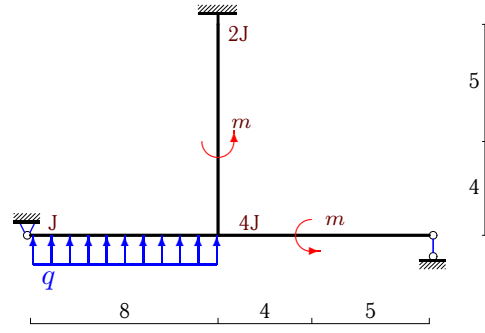
22



$m = 36 \text{ кНм.}$

Задача 33.10.

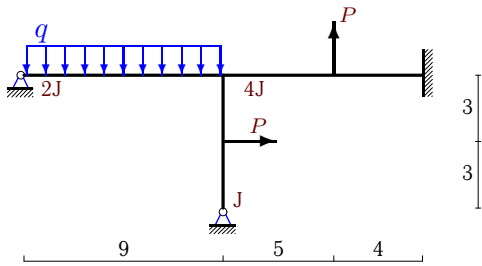
22



$q = 11 \text{ кН/м, } m = 33 \text{ кНм.}$

Задача 33.11.

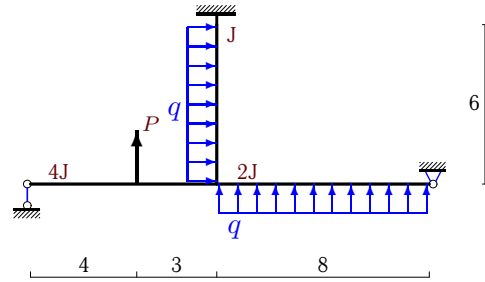
22



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

Задача 33.12.

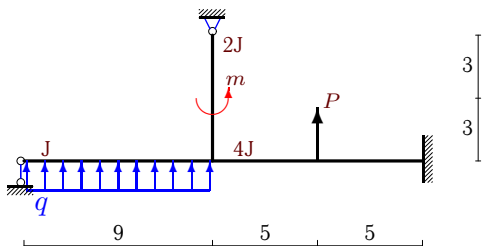
22



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

Задача 33.13.

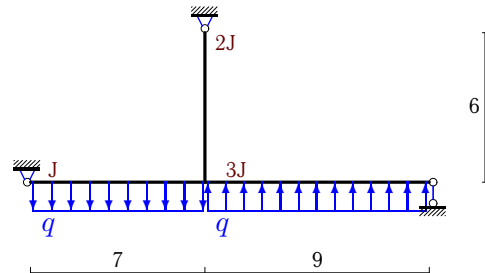
22



$q = 13 \text{ кН/м, } P = 13 \text{ кН, } m = 31 \text{ кНм.}$

Задача 33.14.

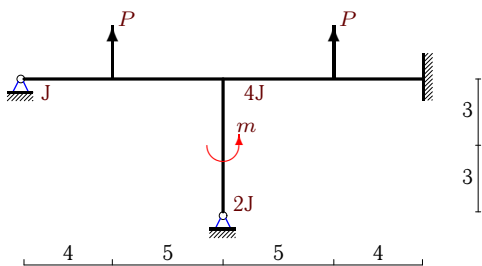
22



$q = 5 \text{ кН/м,}$

Задача 33.15.

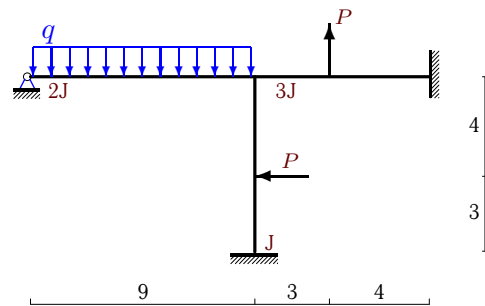
22



$P = 14 \text{ кН, } m = 31 \text{ кНм.}$

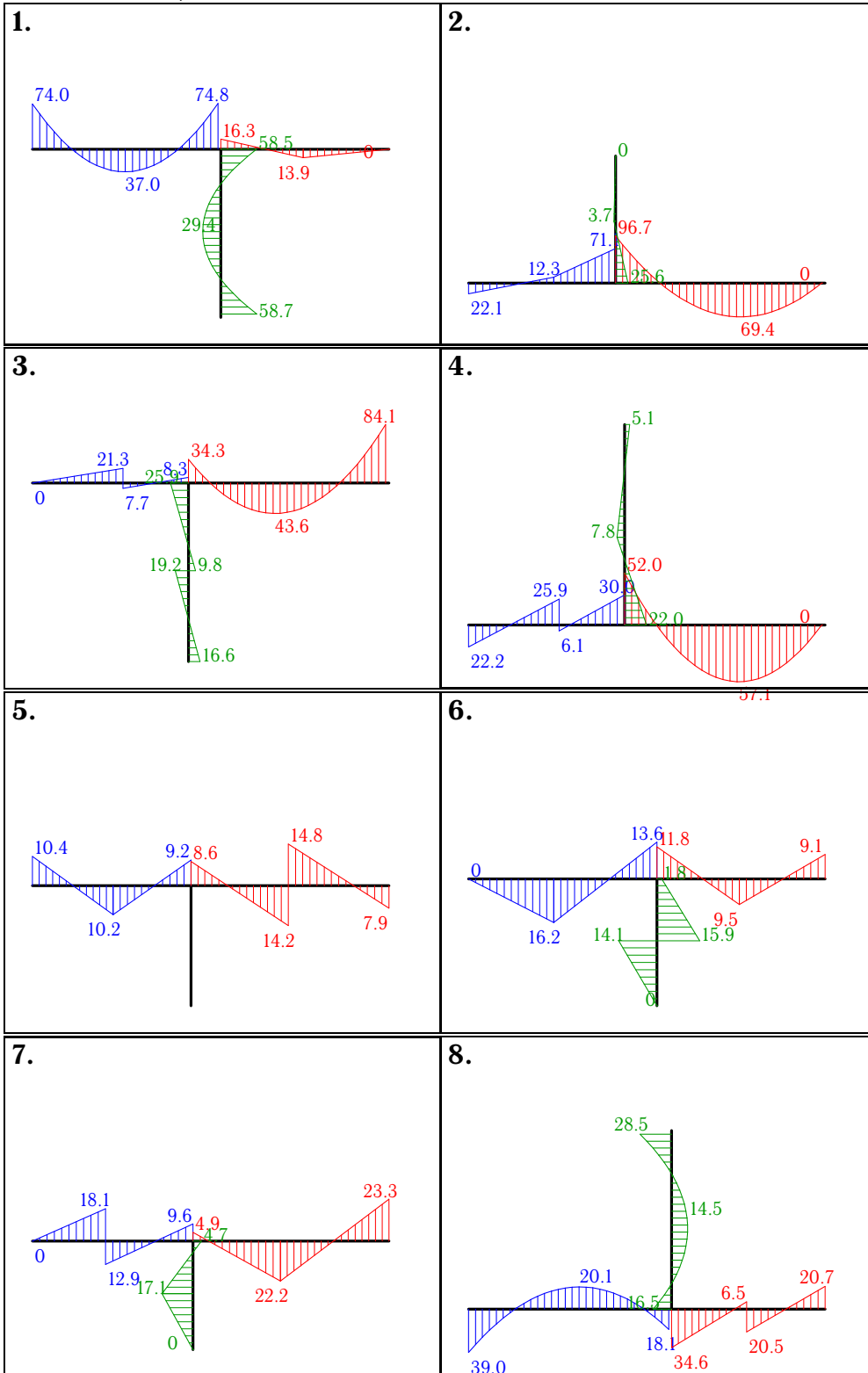
Задача 33.16.

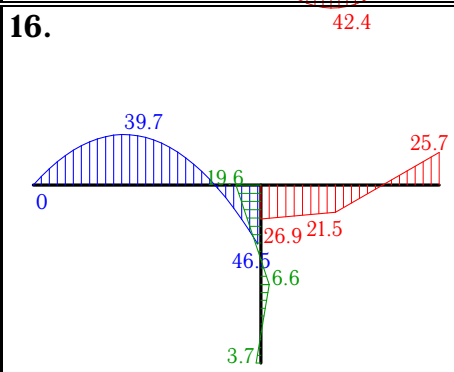
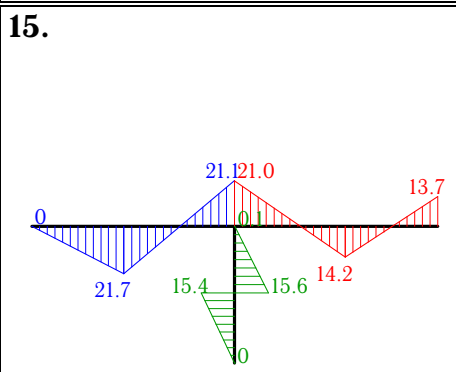
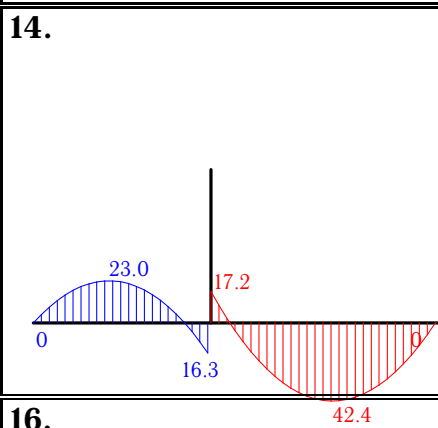
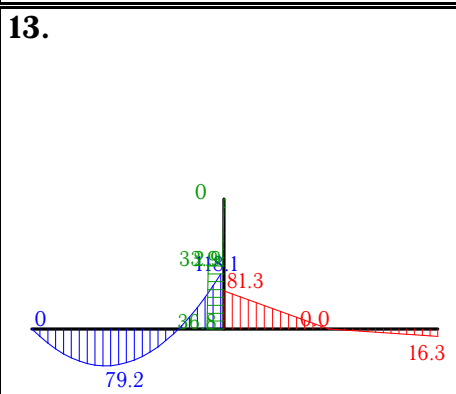
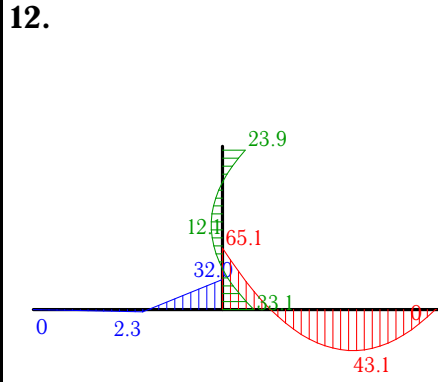
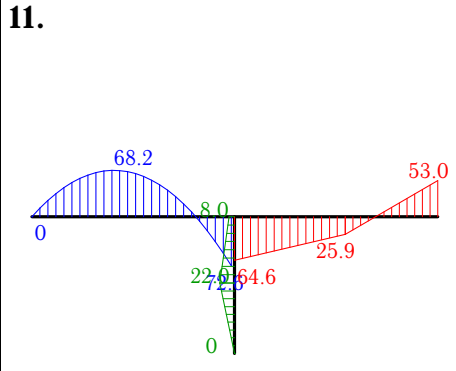
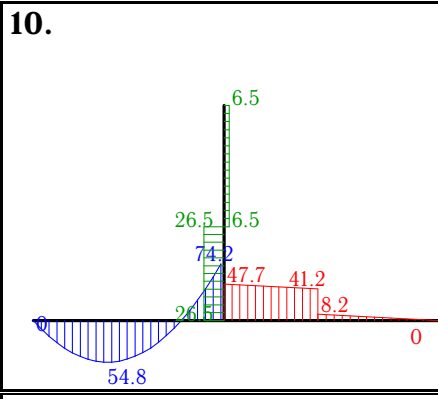
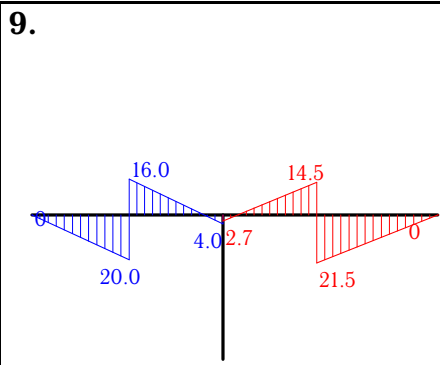
22



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

Статически неопределимая рама (метод перемещений, 2)





	r_1	m_{11}	m_{12}	m_{13}	R_p	M_{p1}	M_{p2}	M_{p3}	Z_1
1	3.028	1.778	0.750	0.500	0.917	-74.250	16.500	58.667	-0.303
2	3.386	2.286	0.600	0.500	89.349	-10.776	112.500	-12.375	-26.390
3	3.206	0.429	1.778	1.000	59.954	-0.296	67.500	-7.250	-18.699
4	2.921	1.143	1.333	0.444	63.430	-5.224	81.000	-12.346	-21.718
5	3.267	1.000	1.600	0.667	-2.750	-10.000	7.250	0.000	0.842
6	2.667	0.667	0.500	1.500	-9.799	-16.049	10.000	-3.750	3.675
7	2.788	0.333	1.455	1.000	27.649	-6.315	19.339	14.625	-9.918
8	3.571	1.000	2.000	0.571	49.750	32.000	-6.750	24.500	-13.930
9	2.375	0.375	1.000	1.000	3.167	4.500	-1.333	0.000	-1.333
10	2.597	0.375	1.333	0.889	-95.333	-88.000	-1.222	-6.111	36.706
11	2.944	0.667	1.778	0.500	126.602	101.250	11.852	13.500	-42.997
12	3.131	1.714	0.750	0.667	28.837	-16.163	72.000	-27.000	-9.210
13	2.933	0.333	1.600	1.000	-119.250	-131.625	16.250	-3.875	40.653
14	2.429	0.429	1.000	1.000	81.250	30.625	50.625	0.000	-33.456
15	3.111	0.333	1.778	1.000	-12.517	-22.469	13.827	-3.875	4.023
16	2.952	0.667	1.714	0.571	63.199	60.750	9.796	-7.347	-21.406