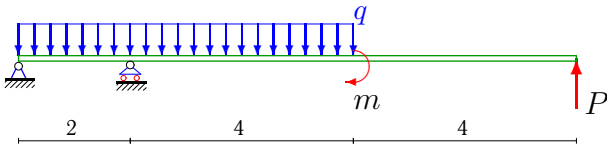


## Балка

Построить эпюры моментов и перерезывающих сил в балке. Найти сечение балки с максимальным моментом. Определить прогиб  $\Delta y$  балки в точке приложения силы  $P$ .

**Задача М4.1.**

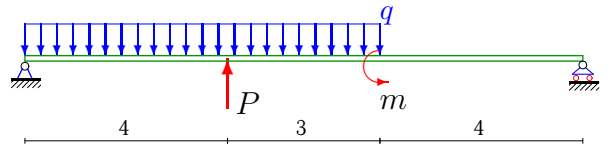
4



$$P = 2 \text{ кН}, m = 10 \text{ кНм}, q = 6 \text{ кН/м.}$$

**Задача М4.2.**

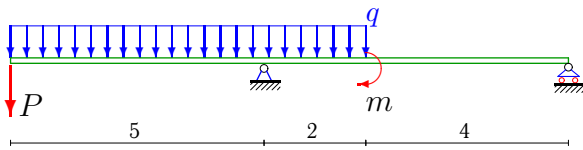
4



$$P = 6 \text{ кН}, m = 20 \text{ кНм}, q = 6 \text{ кН/м.}$$

**Задача М4.3.**

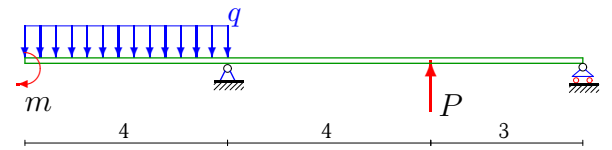
4



$$P = 3 \text{ кН}, m = 40 \text{ кНм}, q = 4 \text{ кН/м.}$$

**Задача М4.4.**

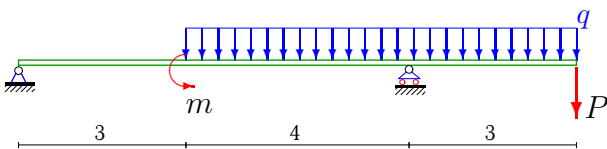
4



$$P = 7 \text{ кН}, m = 20 \text{ кНм}, q = 5 \text{ кН/м.}$$

**Задача М4.5.**

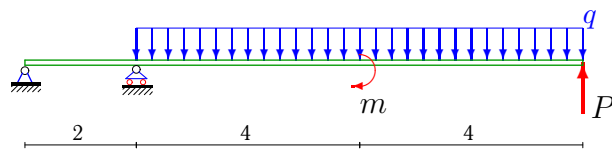
4



$$P = 3 \text{ кН}, m = 20 \text{ кНм}, q = 6 \text{ кН/м.}$$

**Задача М4.6.**

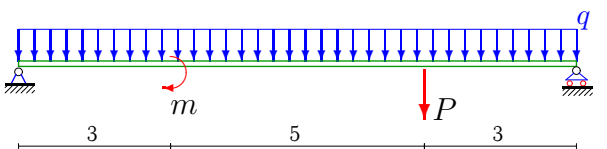
4



$$P = 4 \text{ кН}, m = 10 \text{ кНм}, q = 6 \text{ кН/м.}$$

**Задача М4.7.**

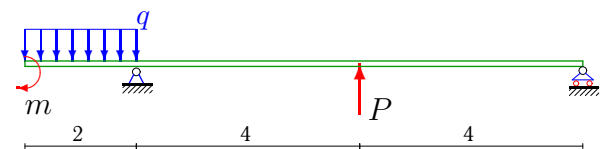
4



$$P = 4 \text{ кН}, m = 10 \text{ кНм}, q = 6 \text{ кН/м.}$$

**Задача М4.8.**

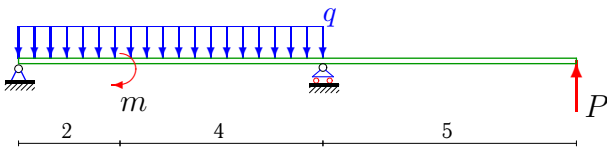
4



$$P = 3 \text{ кН}, m = 20 \text{ кНм}, q = 5 \text{ кН/м.}$$

**Задача М4.9.**

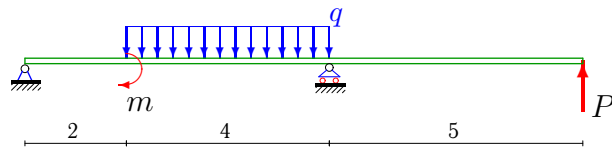
4



$$P = 5 \text{ кН}, m = 20 \text{ кНм}, q = 5 \text{ кН/м.}$$

**Задача М4.10.**

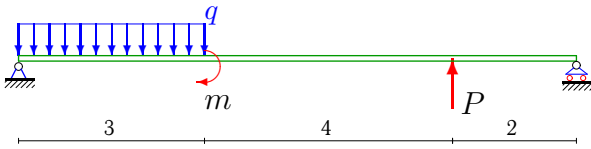
4



$$P = 4 \text{ кН}, m = 30 \text{ кНм}, q = 5 \text{ кН/м.}$$

**Задача М4.11.**

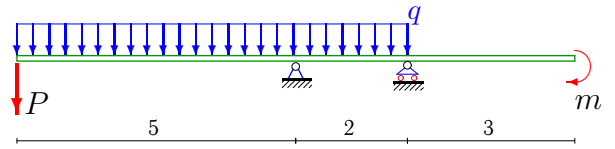
4



$$P = 4 \text{ кН}, m = 30 \text{ кНм}, q = 5 \text{ кН/м.}$$

**Задача М4.12.**

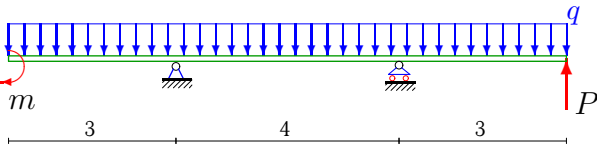
4



$$P = 3 \text{ кН}, m = 40 \text{ кНм}, q = 4 \text{ кН/м.}$$

**Задача М4.13.**

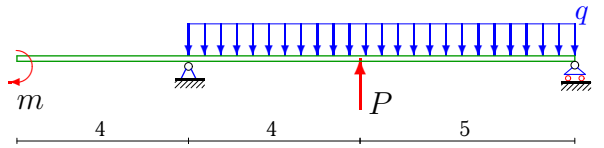
4



$$P = 5 \text{ кН}, m = 10 \text{ кНм}, q = 6 \text{ кН/м.}$$

**Задача М4.14.**

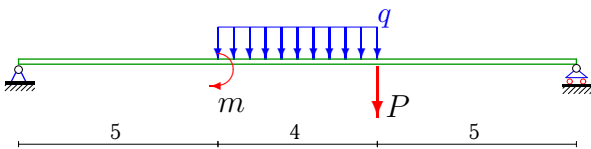
4



$$P = 8 \text{ кН}, m = 20 \text{ кНм}, q = 5 \text{ кН/м.}$$

**Задача М4.15.**

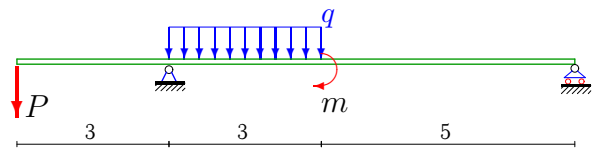
4



$$P = 3 \text{ кН}, m = 20 \text{ кНм}, q = 5 \text{ кН/м.}$$

**Задача М4.16.**

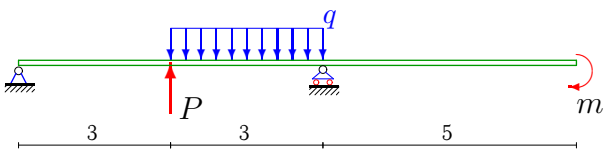
4



$$P = 3 \text{ кН}, m = 10 \text{ кНм}, q = 6 \text{ кН/м.}$$

**Задача М4.17.**

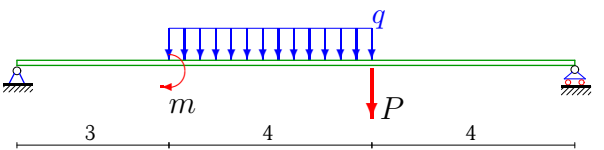
4



$$P = 4 \text{ кН}, m = 10 \text{ кНм}, q = 6 \text{ кН/м.}$$

**Задача М4.18.**

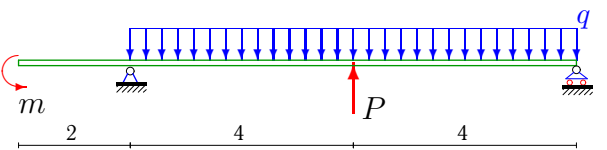
4



$$P = 3 \text{ кН}, m = 30 \text{ кНм}, q = 5 \text{ кН/м.}$$

**Задача М4.19.**

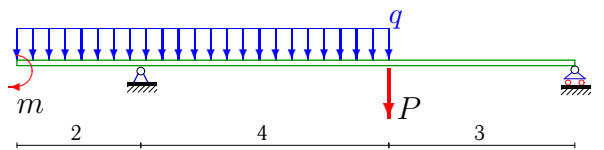
4



$$P = 2 \text{ кН}, m = 20 \text{ кНм}, q = 6 \text{ кН/м.}$$

**Задача М4.20.**

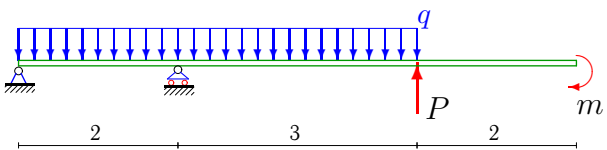
4



$$P = 3 \text{ кН}, m = 10 \text{ кНм}, q = 6 \text{ кН/м.}$$

**Задача М4.21.**

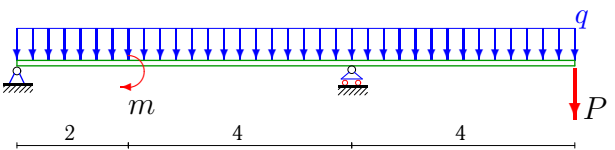
4



$$P = 4 \text{ кН}, m = 10 \text{ кНм}, q = 6 \text{ кН/м.}$$

**Задача М4.22.**

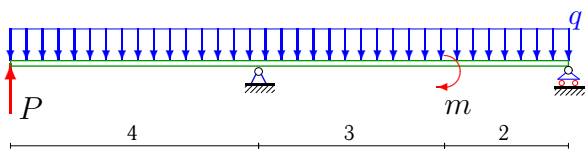
4



$$P = 2 \text{ кН}, m = 20 \text{ кНм}, q = 5 \text{ кН/м.}$$

**Задача М4.23.**

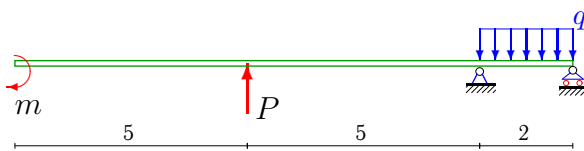
4



$P = 8 \text{ кН}, m = 10 \text{ кНм}, q = 6 \text{ кН/м}.$

**Задача М4.24.**

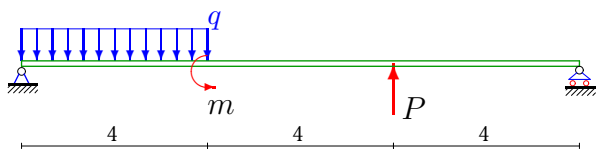
4



$P = 7 \text{ кН}, m = 30 \text{ кНм}, q = 5 \text{ кН/м}.$

**Задача М4.25.**

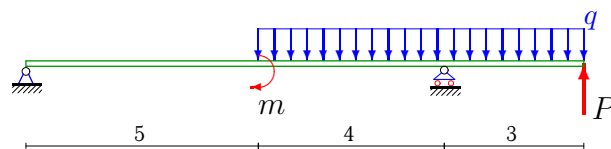
4



$P = 7 \text{ кН}, m = 10 \text{ кНм}, q = 7 \text{ кН/м}.$

**Задача М4.26.**

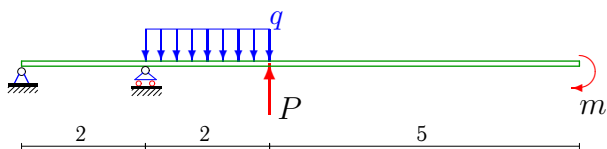
4



$P = 9 \text{ кН}, m = 40 \text{ кНм}, q = 4 \text{ кН/м}.$

**Задача М4.27.**

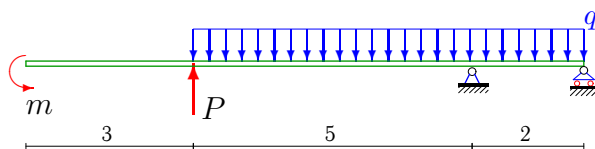
4



$P = 2 \text{ кН}, m = 20 \text{ кНм}, q = 5 \text{ кН/м}.$

**Задача М4.28.**

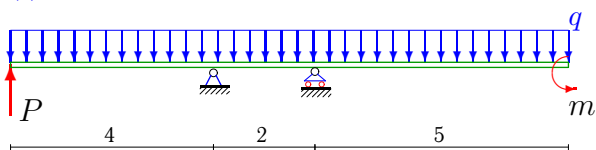
4



$P = 3 \text{ кН}, m = 10 \text{ кНм}, q = 7 \text{ кН/м}.$

**Задача М4.29.**

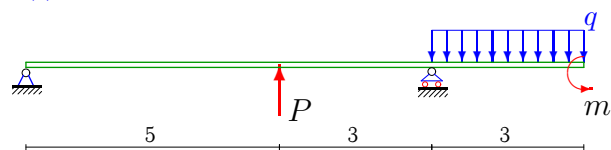
4



$P = 5 \text{ кН}, m = 10 \text{ кНм}, q = 7 \text{ кН/м}.$

**Задача М4.30.**

4



$P = 10 \text{ кН}, m = 10 \text{ кНм}, q = 7 \text{ кН/м}.$

**M4 Ответы.**  
**Балка**

25.02.2013

**Задача 1.**



**Задача 2.**



**Задача 3.**



**Задача 4.**



**Задача 5.**



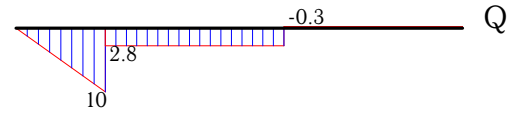
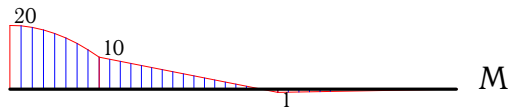
**Задача 6.**



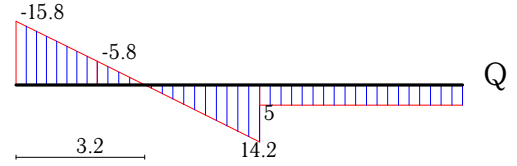
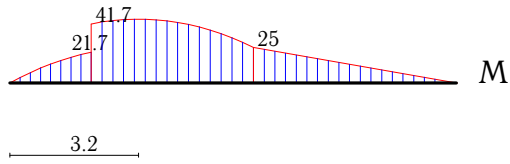
**Задача 7.**



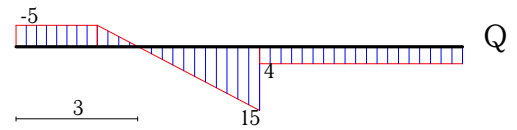
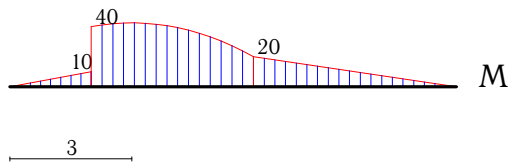
**Задача 8.**



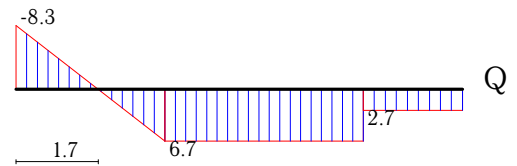
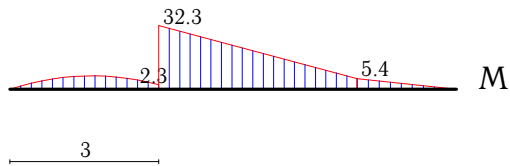
**Задача 9.**



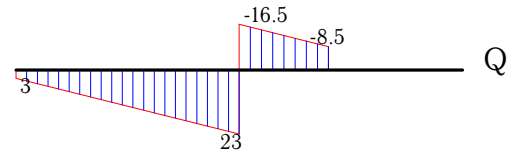
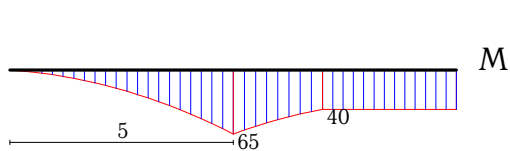
**Задача 10.**



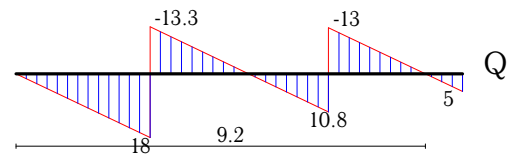
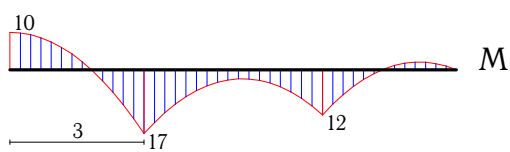
**Задача 11.**



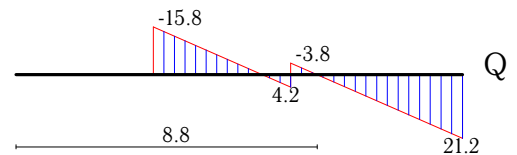
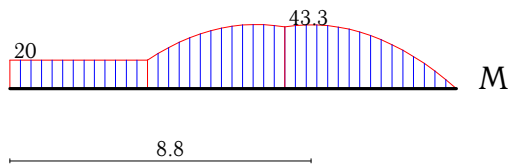
**Задача 12.**



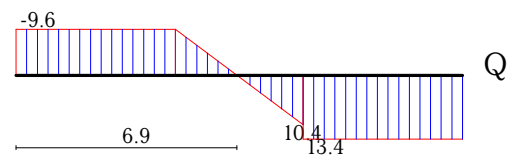
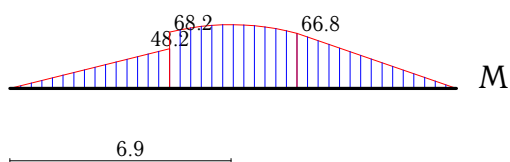
**Задача 13.**



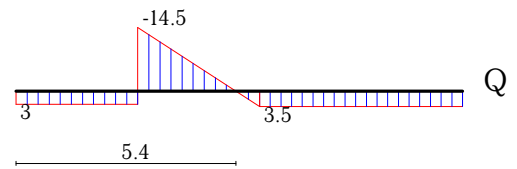
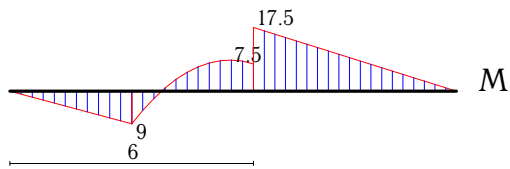
**Задача 14.**



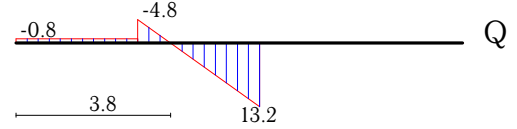
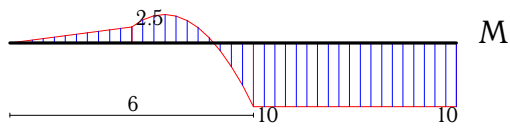
**Задача 15.**



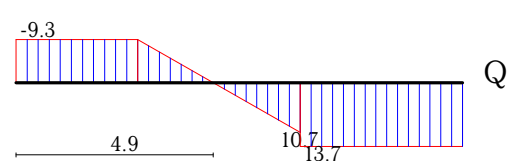
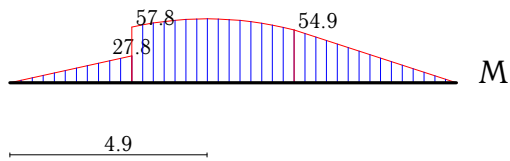
**Задача 16.**



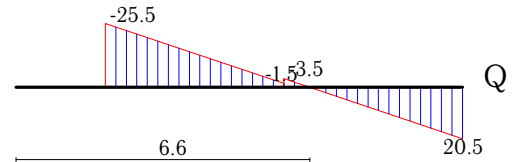
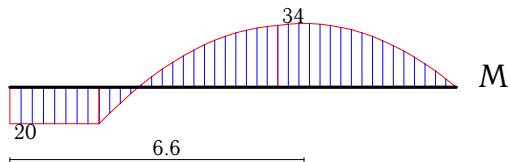
**Задача 17.**



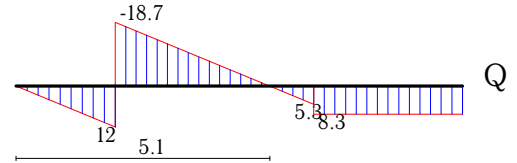
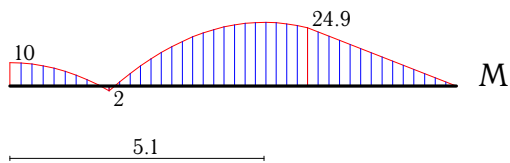
**Задача 18.**



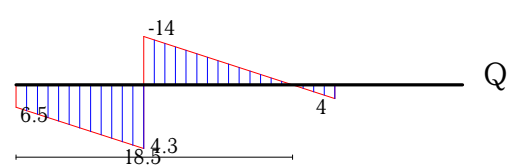
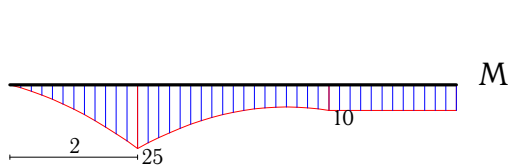
**Задача 19.**



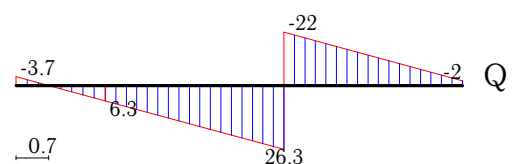
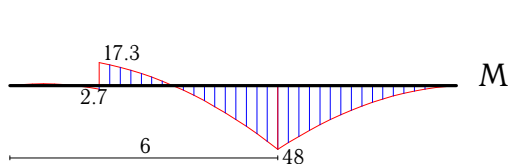
**Задача 20.**



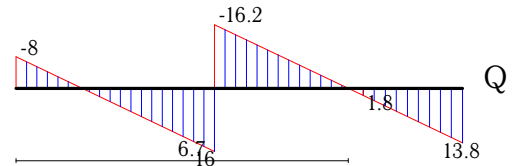
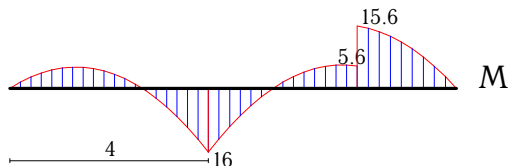
**Задача 21.**



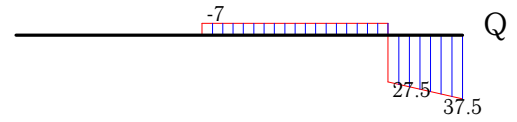
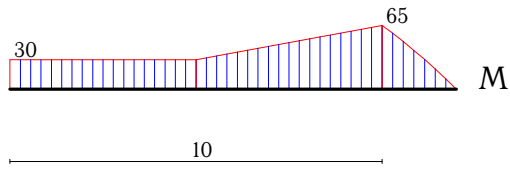
**Задача 22.**



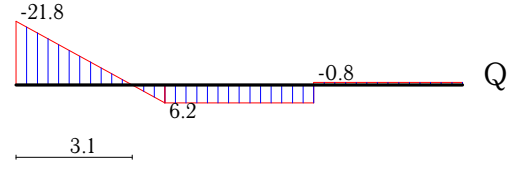
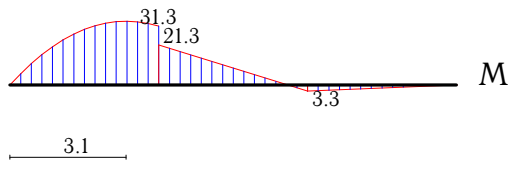
**Задача 23.**



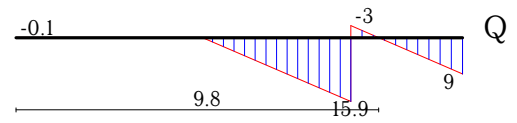
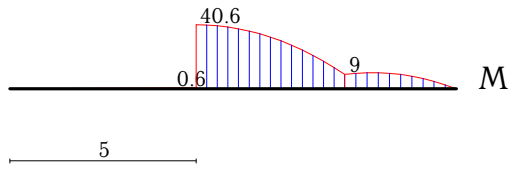
**Задача 24.**



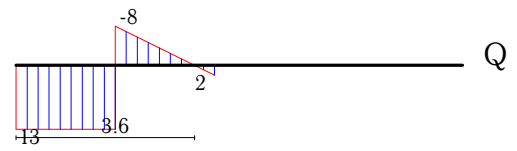
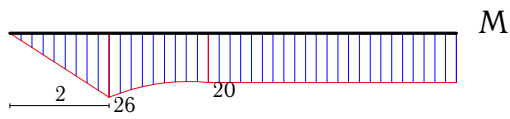
**Задача 25.**



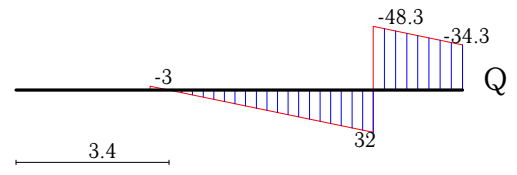
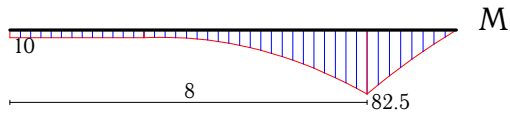
**Задача 26.**



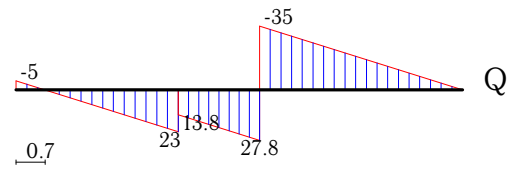
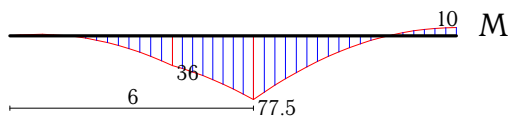
**Задача 27.**



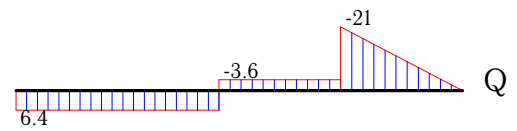
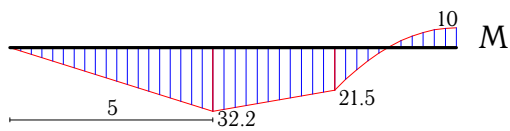
**Задача 28.**



**Задача 29.**



**Задача 30.**



№	$R_A$	$R_B$	$\max M $	$x_*$	$EI\Delta y$
1	-15.00	49.00	42.00	2.00	-554.67
2	26.64	9.36	64.76	5.44	-687.36
3	33.83	-2.83	65.00	5.00	-965.28
4	19.86	-6.86	20.57	8.00	105.14
5	4.57	40.43	36.00	7.00	-199.75
6	-85.00	129.00	170.00	2.00	-3536.00
7	33.18	36.82	101.75	5.53	-978.45
8	7.25	-0.25	20.00	0.00	-8.00
9	15.83	9.17	45.07	3.17	750.00
10	5.00	11.00	42.50	3.00	644.44
11	8.28	2.72	32.33	3.00	-86.94
12	39.50	-8.50	65.00	5.00	-714.17
13	31.25	23.75	17.00	3.00	-49.75
14	15.83	21.17	44.80	8.77	-406.02
15	9.64	13.36	77.51	6.93	-1242.26
16	17.50	3.50	17.50	6.00	50.47
17	0.83	13.17	10.00	6.00	-10.13
18	9.27	13.73	66.42	4.85	-673.70
19	25.50	20.50	35.02	6.58	-218.67
20	30.71	8.29	27.19	5.12	-124.57
21	-6.50	32.50	25.00	2.00	-113.75
22	3.67	48.33	48.00	6.00	-353.33
23	32.20	13.80	16.00	4.00	-20.33
24	-34.50	37.50	65.00	10.00	891.67
25	21.83	-0.83	34.05	3.12	-129.78
26	0.11	18.89	40.56	5.00	309.06
27	-13.00	21.00	26.00	2.00	-79.33
28	80.25	-34.25	82.50	8.00	-810.21
29	9.25	62.75	77.50	6.00	-307.33
30	-6.44	17.44	32.19	5.00	181.09