

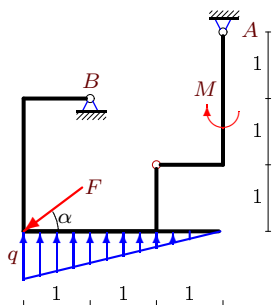
# Составная рама с линейно распределенной нагрузкой

На раму, составленную из двух шарнирно соединенных частей, действует линейно распределенная нагрузка с максимальной интенсивностью  $q$ , сила  $F$  и момент  $M$ . Определить реакции опор (в кН). Размеры даны в метрах.

Кирсанов М.Н. Задачи по теоретической механике с решениями в **Maple** 11. – М.: ФИЗМАТЛИТ, 2010. – 264 с. (с.15)

**Задача S-34.1.**

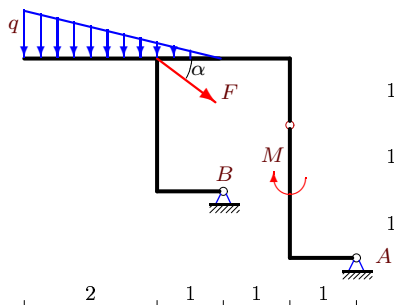
9



$q = 2 \text{ кН/м}, F = 15 \text{ кН},$   
 $M = 27 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S-34.2.**

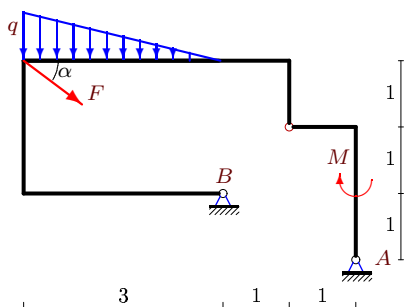
9



$q = 4 \text{ кН/м}, F = 10 \text{ кН},$   
 $M = 37 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S-34.3.**

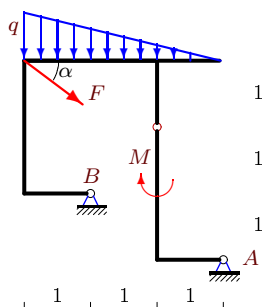
9



$q = 2 \text{ кН/м}, F = 15 \text{ кН},$   
 $M = 39 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S-34.4.**

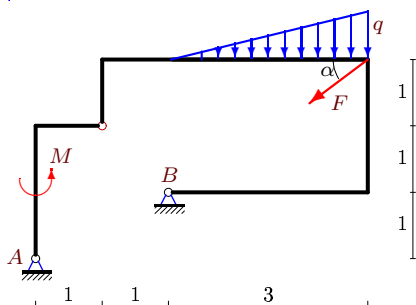
9



$q = 4 \text{ кН/м}, F = 5 \text{ кН},$   
 $M = 17 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S-34.5.**

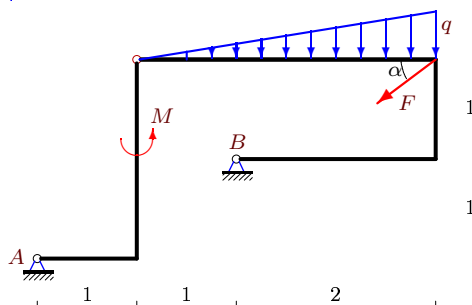
9



$q = 4 \text{ кН/м}, F = 15 \text{ кН},$   
 $M = 39 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S-34.6.**

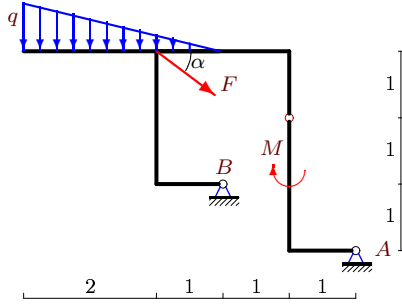
9



$q = 4 \text{ кН/м}, F = 15 \text{ кН},$   
 $M = 24 \text{ кНм}, \cos \alpha = 0.8.$

Задача S-34.7.

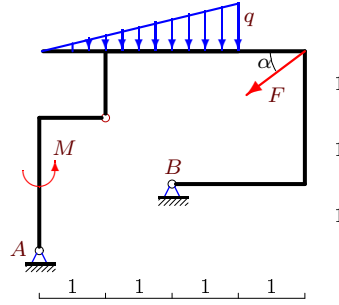
9



$q = 4 \text{ кН/м}$ ,  $F = 5 \text{ кН}$ ,  
 $M = 20 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.8.

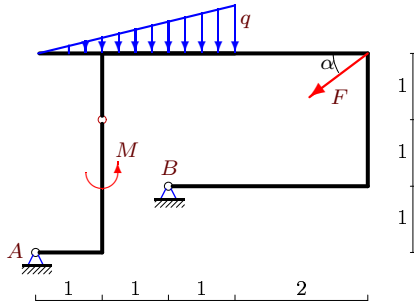
9



$q = 2 \text{ кН/м}$ ,  $F = 5 \text{ кН}$ ,  
 $M = 14 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.9.

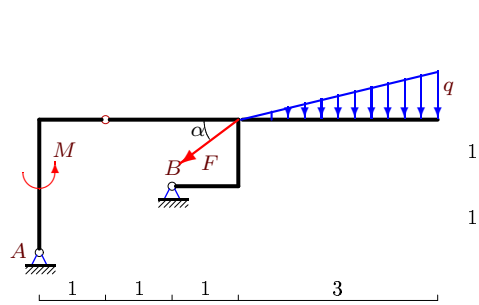
9



$q = 4 \text{ кН/м}$ ,  $F = 15 \text{ кН}$ ,  
 $M = 36 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.10.

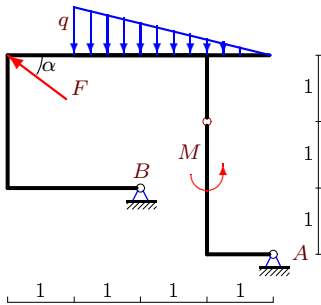
9



$q = 4 \text{ кН/м}$ ,  $F = 20 \text{ кН}$ ,  
 $M = 37 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.11.

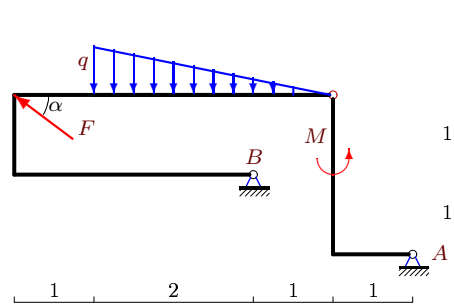
9



$q = 2 \text{ кН/м}$ ,  $F = 5 \text{ кН}$ ,  
 $M = 5 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.12.

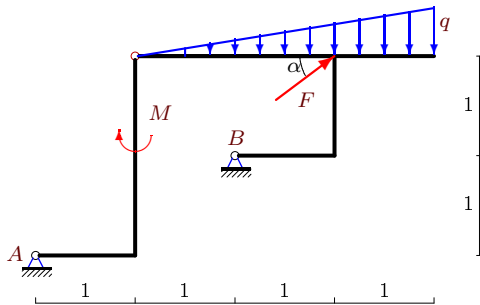
9



$q = 4 \text{ кН/м}$ ,  $F = 15 \text{ кН}$ ,  
 $M = 6 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.13.

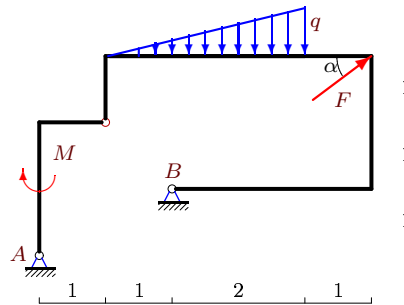
9



$q = 4 \text{ кН/м}$ ,  $F = 15 \text{ кН}$ ,  
 $M = 12 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.14.

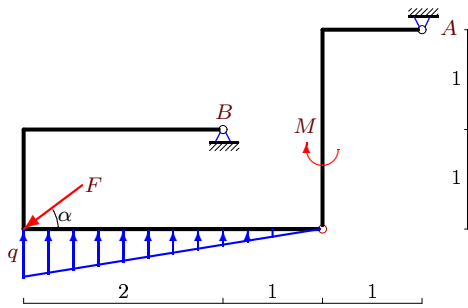
9



$q = 2 \text{ кН/м}$ ,  $F = 10 \text{ кН}$ ,  
 $M = 19 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.15.

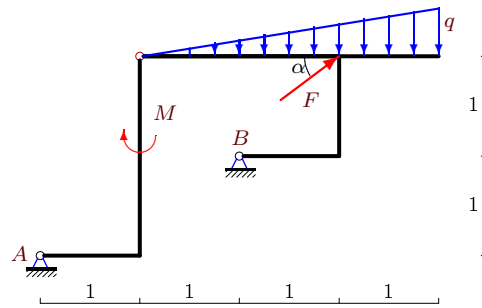
9



$q = 4 \text{ кН/м}$ ,  $F = 10 \text{ кН}$ ,  
 $M = 5 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.16.

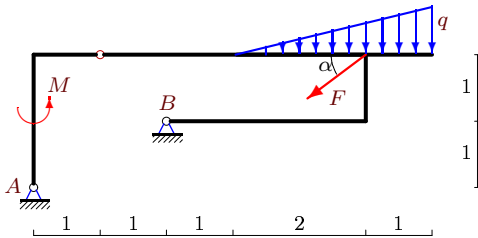
9



$q = 2 \text{ кН/м}$ ,  $F = 5 \text{ кН}$ ,  
 $M = 4 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.17.

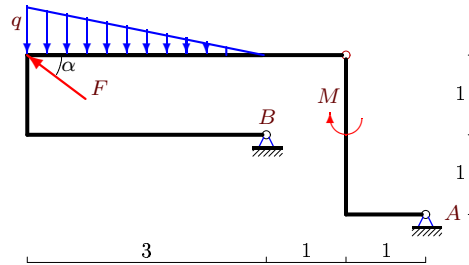
9



$q = 4 \text{ кН/м}$ ,  $F = 5 \text{ кН}$ ,  
 $M = 16 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.18.

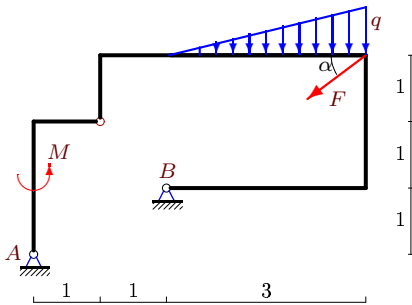
9



$q = 4 \text{ кН/м}$ ,  $F = 10 \text{ кН}$ ,  
 $M = 1 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.19.

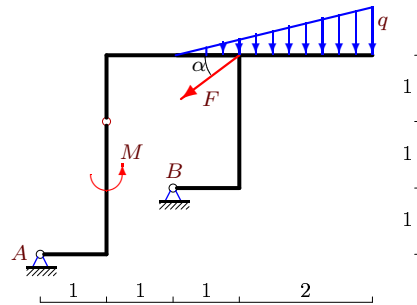
9



$q = 4 \text{ кН/м}$ ,  $F = 15 \text{ кН}$ ,  
 $M = 45 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.20.

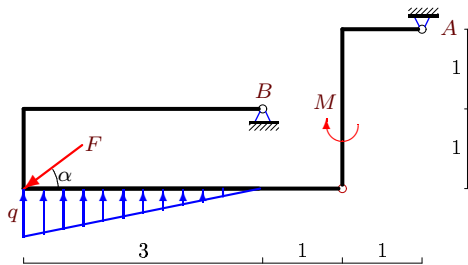
9



$q = 2 \text{ кН/м}$ ,  $F = 10 \text{ кН}$ ,  
 $M = 25 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.21.

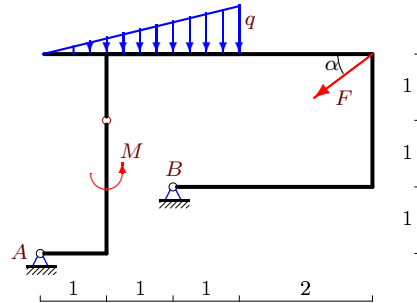
9



$q = 2 \text{ кН/м}$ ,  $F = 15 \text{ кН}$ ,  
 $M = 9 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.22.

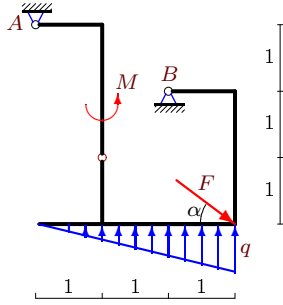
9



$q = 2 \text{ кН/м}$ ,  $F = 5 \text{ кН}$ ,  
 $M = 17 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.23.

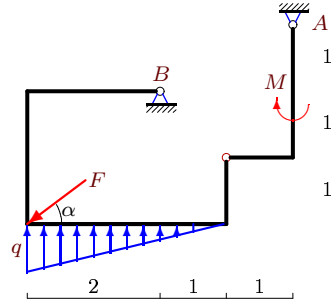
9



$q = 4 \text{ кН/м}$ ,  $F = 15 \text{ кН}$ ,  
 $M = 21 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.24.

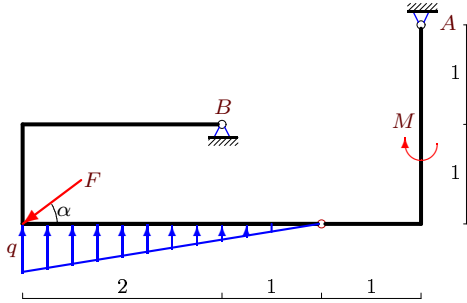
9



$q = 6 \text{ кН/м}$ ,  $F = 15 \text{ кН}$ ,  
 $M = 27 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.25.

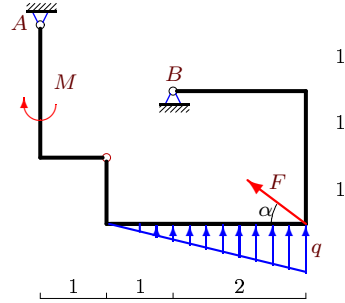
9



$q = 4 \text{ кН/м}$ ,  $F = 20 \text{ кН}$ ,  
 $M = 25 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.26.

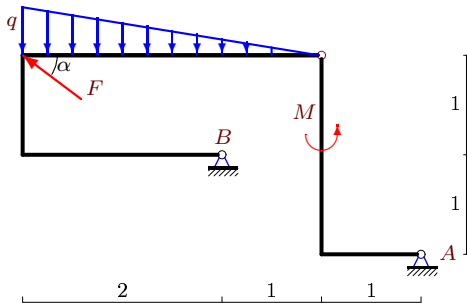
9



$q = 4 \text{ кН/м}$ ,  $F = 10 \text{ кН}$ ,  
 $M = 31 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.27.

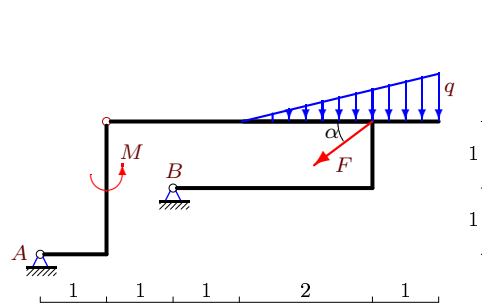
9



$q = 4 \text{ кН/м}$ ,  $F = 15 \text{ кН}$ ,  
 $M = 9 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.28.

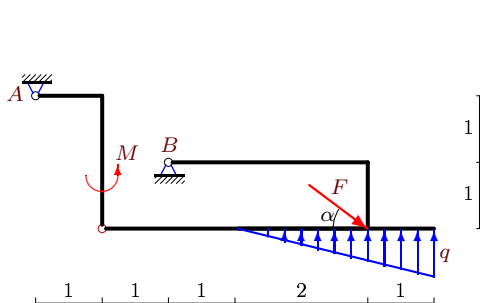
9



$q = 2 \text{ кН/м}$ ,  $F = 5 \text{ кН}$ ,  
 $M = 10 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.29.

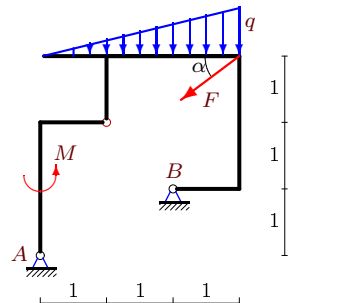
9



$q = 6 \text{ кН/м}$ ,  $F = 10 \text{ кН}$ ,  
 $M = 2 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

Задача S-34.30.

9



$q = 6 \text{ кН/м}$ ,  $F = 10 \text{ кН}$ ,  
 $M = 28 \text{ кНм}$ ,  $\cos \alpha = 0.8$ .

**Составная рама с линейно распределенной нагрузкой**12.02.2015

№	$X_A$	$Y_A$	$X_B$	$Y_B$
1	-4	19	16	-13
2	13	11	-21	1
3	16	7	-28	5
4	4	9	-8	0
5	-18	3	30	12
6	-12	0	24	15
7	9	2	-13	7
8	-4	6	8	0
9	-13	10	25	5
10	-17	3	33	15
11	-1	-3	5	3
12	-5	4	17	-7
13	1	-10	-13	7
14	6	-7	-14	4
15	-1	3	9	-3
16	0	-4	-4	4
17	-13	-10	17	19
18	1	-1	7	1
19	-20	5	32	10
20	-7	11	15	-2
21	-6	-3	18	9
22	-6	5	10	1
23	2	17	-14	-14
24	-4	19	16	-19
25	-9	7	25	-1
26	-11	-9	19	-3
27	-3	-3	15	0
28	-8	-6	12	12
29	-5	12	-3	-15
30	-6	16	14	-1

S-34 файл о34s9A