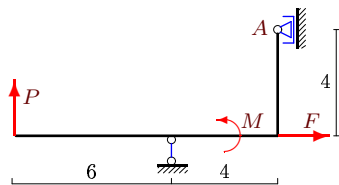


Равновесие рамы с трением

Одна из опор рамы — негладкая не удержижающая шарнирная опора в точке A (односторонняя связь). Заданы нагрузки P и M и коэффициент трения скольжения в опоре A . Размеры на рисунке даны в метрах. Для каких значений силы F система находится в положении равновесия?

Задача S-10.1.

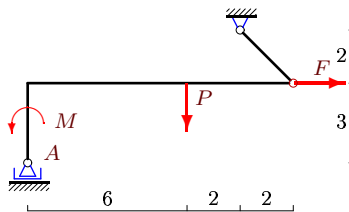
18



$$P = 27 \text{ кН}, M = 34 \text{ кНм}, f_{\text{ТР}} = 1/3.$$

Задача S-10.2.

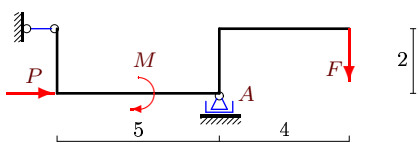
18



$$P = 391 \text{ кН}, M = 391 \text{ кНм}, f_{\text{ТР}} = 1/2.$$

Задача S-10.3.

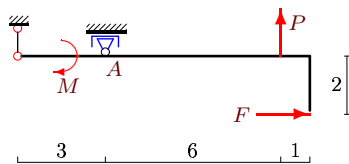
18



$$P = 21 \text{ кН}, M = 7 \text{ кНм}, f_{\text{ТР}} = 3/2.$$

Задача S-10.4.

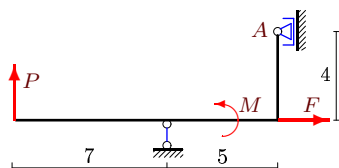
18



$$P = 13 \text{ кН}, M = 85 \text{ кНм}, f_{\text{ТР}} = 1/2.$$

Задача S-10.5.

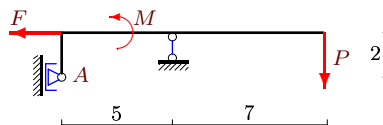
18



$$P = 62 \text{ кН}, M = 59 \text{ кНм}, f_{\text{ТР}} = 1/5.$$

Задача S-10.6.

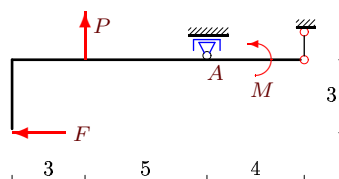
18



$$P = 4 \text{ кН}, M = 13 \text{ кНм}, f_{\text{ТР}} = 1/5.$$

Задача S-10.7.

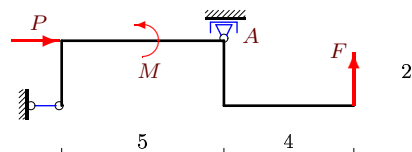
18



$$P = 19 \text{ кН}, M = 43 \text{ кНм}, f_{\text{ТР}} = 4/5.$$

Задача S-10.8.

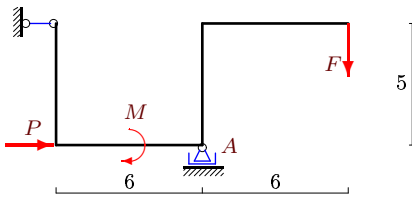
18



$$P = 21 \text{ кН}, M = 35 \text{ кНм}, f_{\text{ТР}} = 3/2.$$

Задача S-10.9.

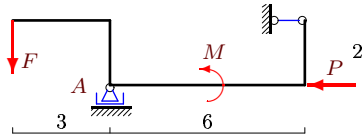
18



$P = 819 \text{ кН}, M = 3510 \text{ кНм}, f_{\text{ТР}} = 3/4.$

Задача S-10.10.

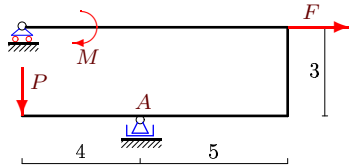
18



$P = 32 \text{ кН}, M = 52 \text{ кНм}, f_{\text{ТР}} = 1/2.$

Задача S-10.11.

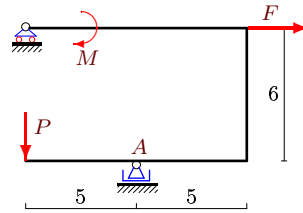
18



$P = 9 \text{ кН}, M = 36 \text{ кНм}, f_{\text{ТР}} = 2/3.$

Задача S-10.12.

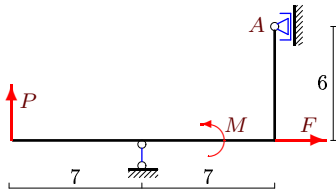
18



$P = 7 \text{ кН}, M = 162 \text{ кНм}, f_{\text{ТР}} = 2/3.$

Задача S-10.13.

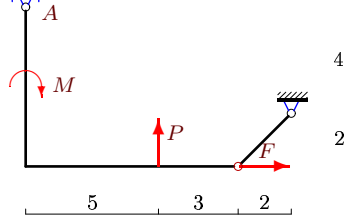
18



$P = 18 \text{ кН}, M = 31 \text{ кНм}, f_{\text{ТР}} = 1/2.$

Задача S-10.14.

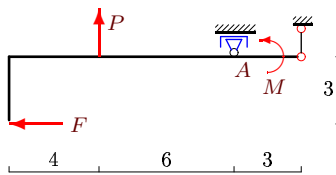
18



$P = 22 \text{ кН}, M = 44 \text{ кНм}, f_{\text{ТР}} = 1/2.$

Задача S-10.15.

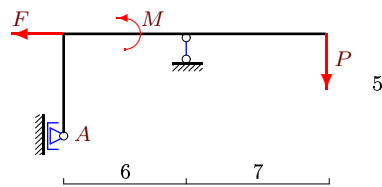
18



$P = 14 \text{ кН}, M = 81 \text{ кНм}, f_{\text{ТР}} = 2/3.$

Задача S-10.16.

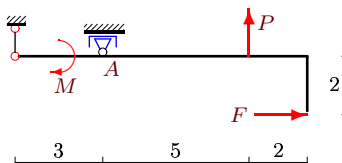
18



$P = 43 \text{ кН}, M = 13 \text{ кНм}, f_{\text{ТР}} = 1/6.$

Задача S-10.17.

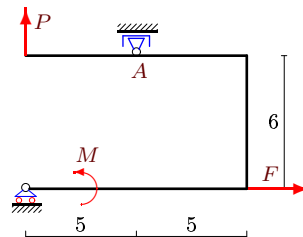
18



$P = 3 \text{ кН}, M = 16 \text{ кНм}, f_{\text{ТР}} = 1/2.$

Задача S-10.18.

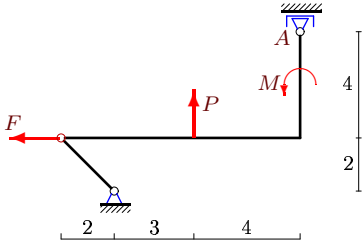
18



$P = 13 \text{ кН}, M = 81 \text{ кНм}, f_{\text{ТР}} = 2/3.$

Задача S-10.19.

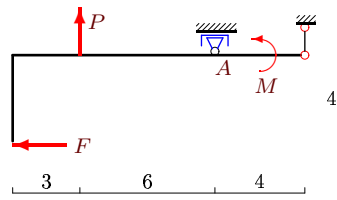
18



$P = 665 \text{ кН}, M = 665 \text{ кНм}, f_{\text{ТР}} = 2/3.$

Задача S-10.20.

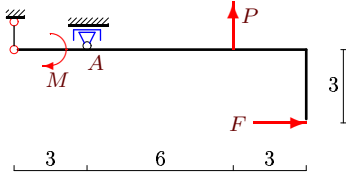
18



$P = 9 \text{ кН}, M = 34 \text{ кНм}, f_{\text{ТР}} = 3/4.$

Задача S-10.21.

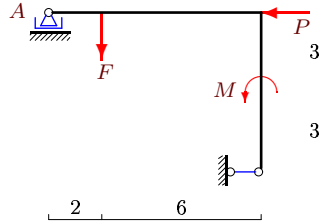
18



$P = 17 \text{ кН}, M = 72 \text{ кНм}, f_{\text{ТР}} = 4/5.$

Задача S-10.22.

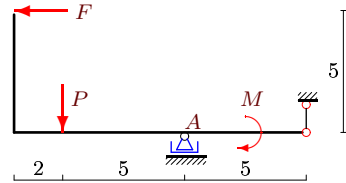
18



$P = 5 \text{ кН}, M = 78 \text{ кНм}, f_{\text{ТР}} = 2/3.$

Задача S-10.23.

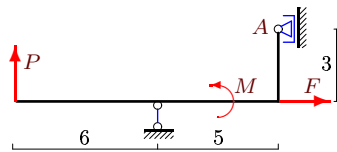
18



$P = 27 \text{ кН}, M = 95 \text{ кНм}, f_{\text{ТР}} = 3/4.$

Задача S-10.24.

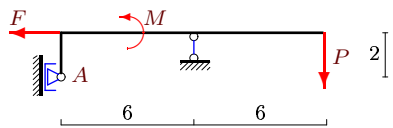
18



$P = 59 \text{ кН}, M = 55 \text{ кНм}, f_{\text{ТР}} = 1/6.$

Задача S-10.25.

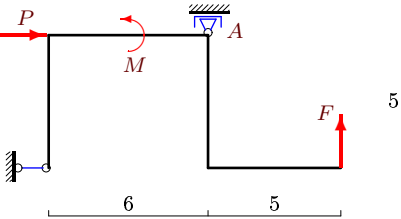
18



$P = 13 \text{ кН}, M = 14 \text{ кНм}, f_{\text{ТР}} = 1/5.$

Задача S-10.26.

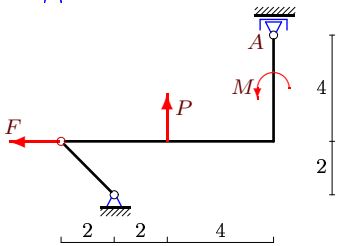
18



$P = 75 \text{ кН}, M = 350 \text{ кНм}, f_{\text{ТР}} = 2/3.$

Задача S-10.27.

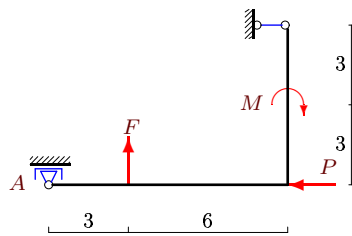
18



$P = 32 \text{ кН}, M = 32 \text{ кНм}, f_{\text{ТР}} = 2/3.$

Задача S-10.28.

18



$P = 1 \text{ кН}, M = 54 \text{ кНм}, f_{\text{ТР}} = 3/4.$

Ответы.**Равновесие рамы с трением**

16.02.2015

№	F
1	$24 < F < 48$ кН
2	$46 < F < 306$ кН
3	$5 < F < 35$ кН
4	$-4 < F < 8$ кН
5	$75 < F < 125$ кН
6	$5 < F < 15$ кН
7	$-16 < F < 64$ кН
8	$1 < F < 7$ кН
9	$60 < F < 260$ кН
10	$3 < F < 6$ кН
11	$-4 < F < 12$ кН
12	$-12 < F < 108$ кН
13	$10 < F < 38$ кН
14	$-11 < F < 17$ кН
15	$-6 < F < 30$ кН
16	$48 < F < 72$ кН
17	$-1 < F < 2$ кН
18	$-6 < F < 54$ кН
19	$-385 < F < 551$ кН
20	$-6 < F < 42$ кН
21	$-12 < F < 108$ кН
22	$F > 18$ кН
23	$-15 < F < 105$ кН
24	$78 < F < 138$ кН
25	$20 < F < 80$ кН
26	$3 < F < 15$ кН
27	$-18 < F < 27$ кН
28	$F > 8$ кН

S-10 файл о10s18A