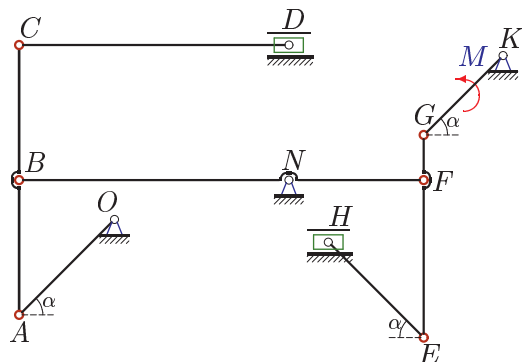


Условие равновесия механизма

Плоский многозвенный механизм с одной степенью свободы находится в равновесии. К кривошипу OA приложен момент M . Размеры даны в сантиметрах. Дан ряд p распределения дискретной случайной величины силы сопротивления в ползунах $T_i, i = 1, \dots, 4$. Найти математическое ожидание момента M .

Кирсанов М.Н. **Решebник. Теоретическая механика**/Под ред. А. И. Кириллова. – М.: ФИЗМАТЛИТ, 2008. — 384 с. (с.158.)

Задача 27.1.



Абалимов Александр

$\alpha = 45^\circ,$

$AB = 30, BC = 30,$

$$NB = 60, NF = 30,$$

$CD = 60, EH = 30,$

$FE = 35, FG = 10,$

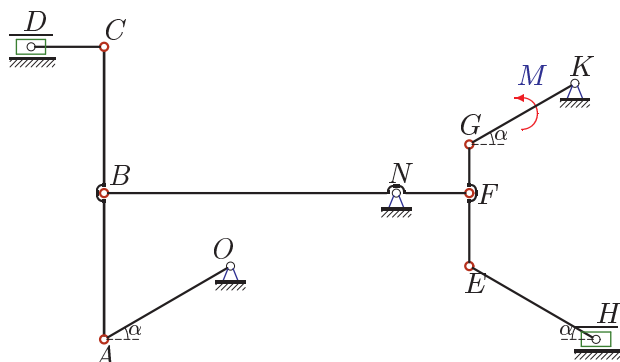
$OA = 30, KG = 25.$

$a_G, a_F, a_{E-}?$

$$p = [0.1, 0.3, 0.35, 0.25],$$

$$T = [8.5, 7, 6.5, 5.5] \text{ H.}$$

Задача 27.2.



Антощенко Анастасия

$$\alpha = 30^\circ,$$

$AB = 30, BC = 30,$

$$NB = 60, NF = 15,$$

$CD = 15, EH = 30,$

$FE = 15, FG = 10,$

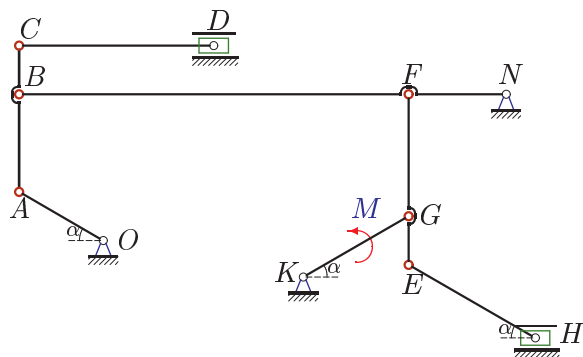
$OA = 30, KG = 25.$

$a_G, a_F, a_E - ?$

$$p = [0.1, 0.3, 0.35, 0.25],$$

$$T = [8.5, 7, 6.5, 5] \text{ H.}$$

Задача 27.3.



Безруков Игорь

$$\alpha = 30^\circ,$$

$AB = 20, BC = 10,$

$$BF = 80, NF = 20,$$

$CD = 40, EH = 30,$

$FG = 25, GE = 10,$

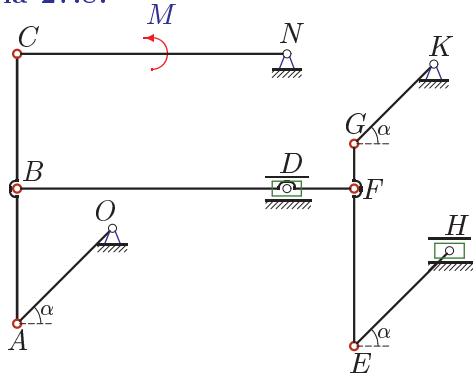
$OA = 20, KG = 25.$

$a_G, a_F, a_E - ?$

$$p = [0.1, 0.3, 0.35, 0.25],$$

$$T = [8.5, 7.5, 6.5, 5] \text{ H.}$$

Задача 27.8.



Дробчик Георгий

$$\alpha = 45^\circ,$$

$$AB = 30, BC = 30,$$

$$DB = 60, DF = 15,$$

$$NC = 60, EH = 30,$$

$$FE = 35, FG = 10,$$

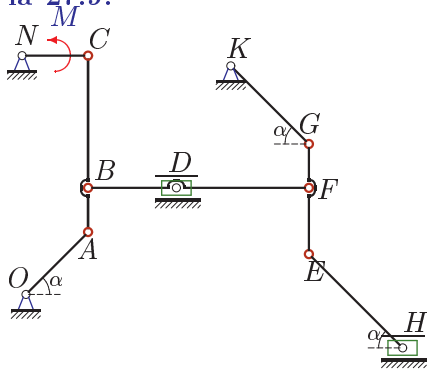
$$OA = 30, KG = 25.$$

$$a_A, a_B, a_C - ?$$

$$p = [0.1, 0.3, 0.4, 0.2],$$

$$T = [8, 7, 6, 5.5] \text{ Н.}$$

Задача 27.9.



Куртин Валерий

$$\alpha = 45^\circ,$$

$$AB = 10, BC = 30,$$

$$DB = 20, DF = 30,$$

$$NC = 15, EH = 30,$$

$$FE = 15, FG = 10,$$

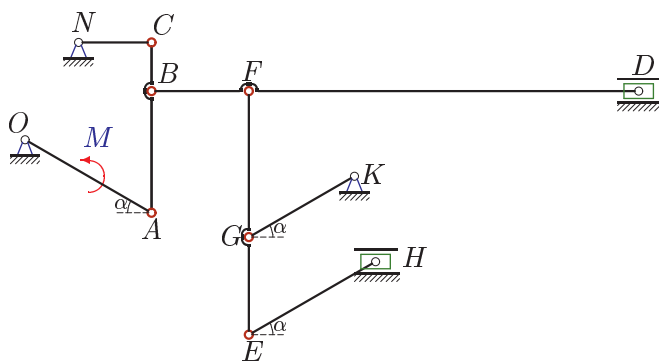
$$OA = 20, KG = 25.$$

$$a_A, a_B, a_C - ?$$

$$p = [0.05, 0.35, 0.4, 0.2],$$

$$T = [8, 7.5, 6.5, 5] \text{ Н.}$$

Задача 27.10.



Королева Татьяна

$$\alpha = 30^\circ,$$

$$AB = 25, BC = 10,$$

$$BF = 20, FD = 80,$$

$$NC = 15, EH = 30,$$

$$FE = 50, FG = 30,$$

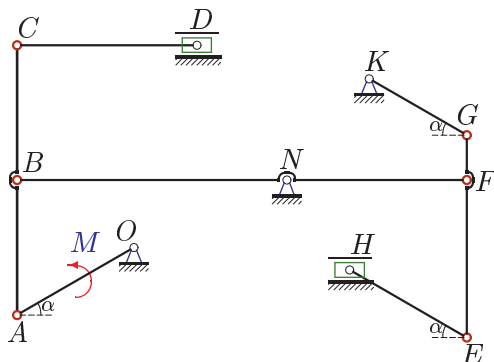
$$OA = 30, KG = 25.$$

$$a_A, a_B, a_C - ?$$

$$p = [0.05, 0.35, 0.35, 0.25],$$

$$T = [8.5, 7, 6, 5] \text{ Н.}$$

Задача 27.11.



Кузнецов Степан

$$\alpha = 30^\circ,$$

$$AB = 30, BC = 30,$$

$$NB = 60, NF = 40,$$

$$CD = 40, EH = 30,$$

$$FE = 35, FG = 10,$$

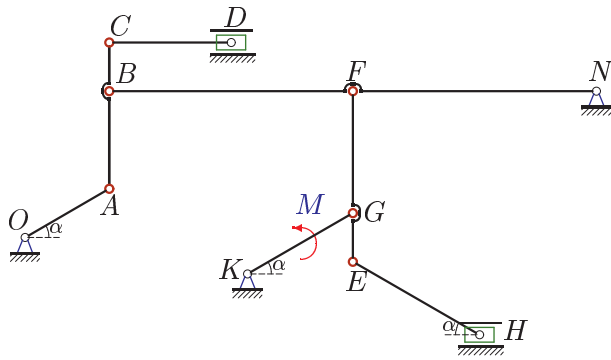
$$OA = 30, KG = 25.$$

$$a_A, a_B, a_C - ?$$

$$p = [0.05, 0.35, 0.4, 0.2],$$

$$T = [8, 7, 6, 5.5] \text{ Н.}$$

Задача 27.12.



Майков Дмитрий

$$\alpha = 30^\circ,$$

$$AB = 20, BC = 10,$$

$$BF = 50, NF = 50,$$

$$CD = 25, EH = 30,$$

$$FG = 25, GE = 10,$$

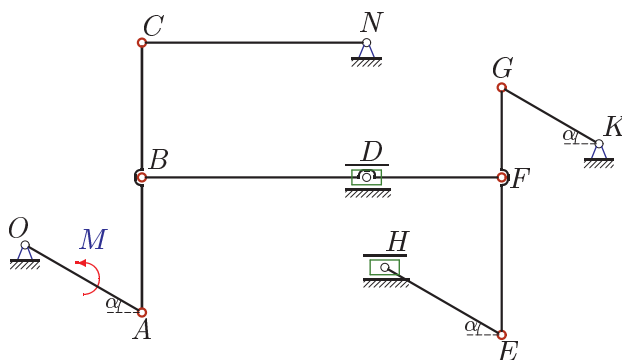
$$OA = 20, KG = 25.$$

$$a_G, a_F, a_E - ?$$

$$p = [0.05, 0.35, 0.35, 0.25],$$

$$T = [8.5, 7, 6, 5.5] \text{ Н.}$$

Задача 27.13.



Нессанс Эдгар Матвеев

$$\alpha = 30^\circ,$$

$$AB = 30, BC = 30,$$

$$DB = 50, DF = 30,$$

$$NC = 50, EH = 30,$$

$$FE = 35, FG = 20,$$

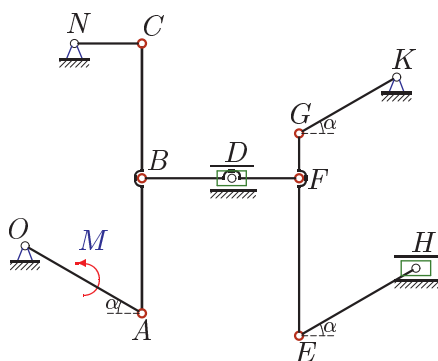
$$OA = 30, KG = 25.$$

$$a_A, a_B, a_C - ?$$

$$p = [0.05, 0.35, 0.35, 0.25],$$

$$T = [8.5, 7, 6.5, 5] \text{ Н.}$$

Задача 27.14.



Ромич Антон

$$\alpha = 30^\circ,$$

$$AB = 30, BC = 30,$$

$$DB = 20, DF = 15,$$

$$NC = 15, EH = 30,$$

$$FE = 35, FG = 10,$$

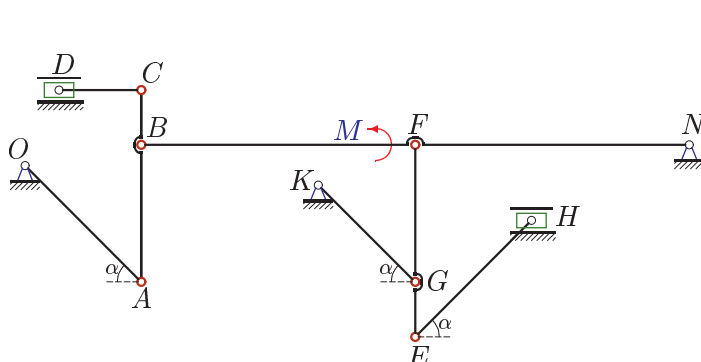
$$OA = 30, KG = 25.$$

$$a_A, a_B, a_C - ?$$

$$p = [0.1, 0.3, 0.4, 0.2],$$

$$T = [8, 7, 6, 5] \text{ Н.}$$

Задача 27.15.



Солдатов Александр

$$\alpha = 45^\circ,$$

$$AB = 25, BC = 10,$$

$$BF = 50, NF = 50,$$

$$CD = 15, EH = 30,$$

$$FG = 25, GE = 10,$$

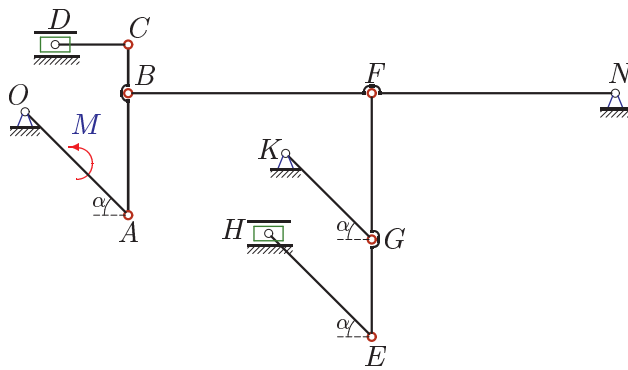
$$OA = 30, KG = 25.$$

$$a_A, a_B, a_C - ?$$

$$p = [0.05, 0.35, 0.4, 0.2],$$

$$T = [8, 7, 6.5, 5] \text{ Н.}$$

Задача 27.16.



Толмачёв Никита

$$\alpha = 45^\circ,$$

$$AB = 25, BC = 10,$$

$$BF = 50, NF = 50,$$

$$CD = 15, EH = 30,$$

$$FG = 30, GE = 20,$$

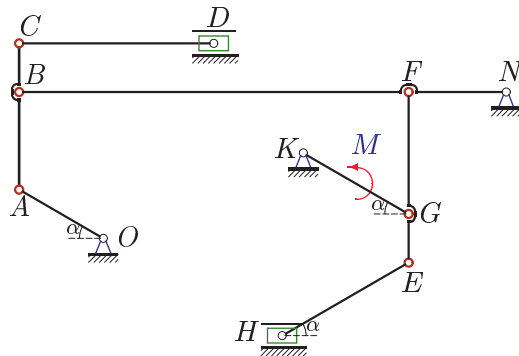
$$OA = 30, KG = 25.$$

$$a_A, a_B, a_C - ?$$

$$p = [0.1, 0.3, 0.4, 0.2],$$

$$T = [8, 7, 6, 5.5] \text{ Н.}$$

Задача 27.17.



Толушкин Ростислав

$$\alpha = 30^\circ,$$

$$AB = 20, BC = 10,$$

$$BF = 80, NF = 20,$$

$$CD = 40, EH = 30,$$

$$FG = 25, GE = 10,$$

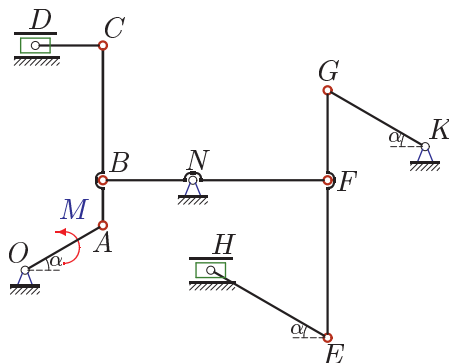
$$OA = 20, KG = 25.$$

$$a_G, a_F, a_E - ?$$

$$p = [0.05, 0.35, 0.35, 0.25],$$

$$T = [8.5, 7.5, 6, 5] \text{ Н.}$$

Задача 27.18.



Трифонов Дмитрий

$$\alpha = 30^\circ,$$

$$AB = 10, BC = 30,$$

$$NB = 20, NF = 30,$$

$$CD = 15, EH = 30,$$

$$FE = 35, FG = 20,$$

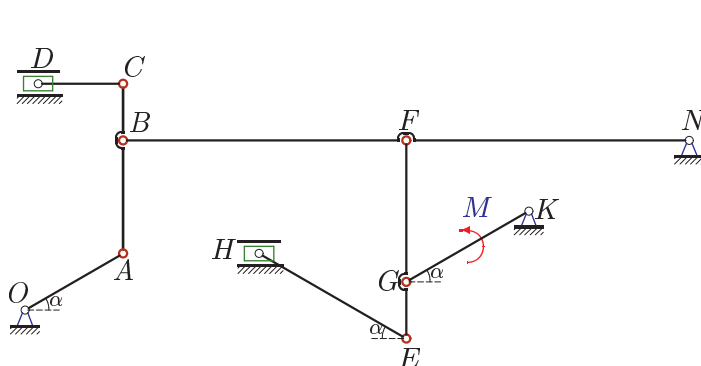
$$OA = 20, KG = 25.$$

$$a_A, a_B, a_C - ?$$

$$p = [0.05, 0.35, 0.35, 0.25],$$

$$T = [8.5, 7, 6, 5.5] \text{ Н.}$$

Задача 27.19.



Чумаков Иван

$$\alpha = 30^\circ,$$

$$AB = 20, BC = 10,$$

$$BF = 50, NF = 50,$$

$$CD = 15, EH = 30,$$

$$FG = 25, GE = 10,$$

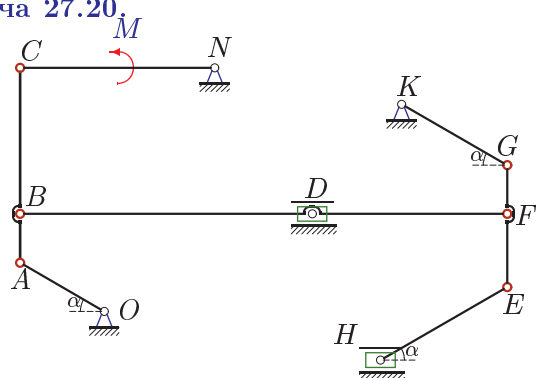
$$OA = 20, KG = 25.$$

$$a_G, a_F, a_E - ?$$

$$p = [0.05, 0.35, 0.35, 0.25],$$

$$T = [8.5, 7, 6.5, 5] \text{ Н.}$$

Задача 27.20.



Шибанов Сергей

$$\alpha = 30^\circ,$$

$$AB = 10, BC = 30,$$

$$DB = 60, DF = 40,$$

$$NC = 40, EH = 30,$$

$$FE = 15, FG = 10,$$

$$OA = 20, KG = 25.$$

$$a_A, a_B, a_C - ?$$

$$p = [0.1, 0.3, 0.35, 0.25],$$

$$T = [8.5, 7, 6.5, 5.5] \text{ Н.}$$