

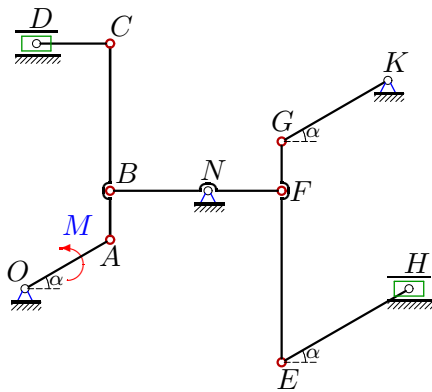
Условие равновесия механизма

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

Задача L-27.1.

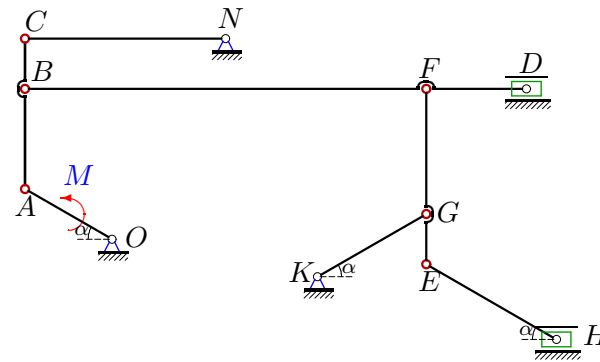
Айсин Т.В.



$$\begin{aligned} \alpha &= 30^\circ, \\ AB &= 10, BC = 30, \\ NB &= 20, NF = 15, \\ CD &= 15, EH = 30, \\ FE &= 35, FG = 10, \\ OA &= 20, KG = 25. \\ p &= [0.1, 0.3, 0.4, 0.2], \\ T &= [8, 7.5, 6.5, 5] \text{ Н.} \end{aligned}$$

Задача L-27.2.

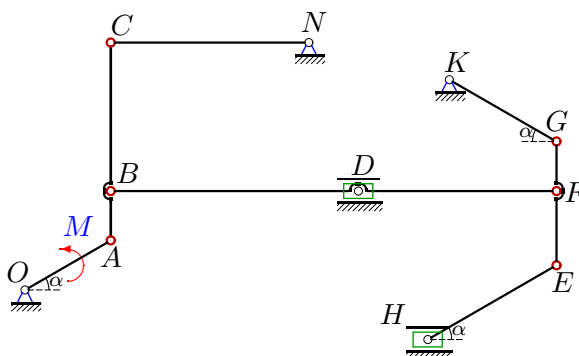
Афанасьев В.А.



$$\begin{aligned} \alpha &= 30^\circ, \\ AB &= 20, BC = 10, \\ BF &= 80, FD = 20, \\ NC &= 40, EH = 30, \\ FE &= 35, FG = 25, \\ OA &= 20, KG = 25. \\ p &= [0.05, 0.35, 0.35, 0.25], \\ T &= [8.5, 7.5, 6, 5] \text{ Н.} \end{aligned}$$

Задача L-27.3.

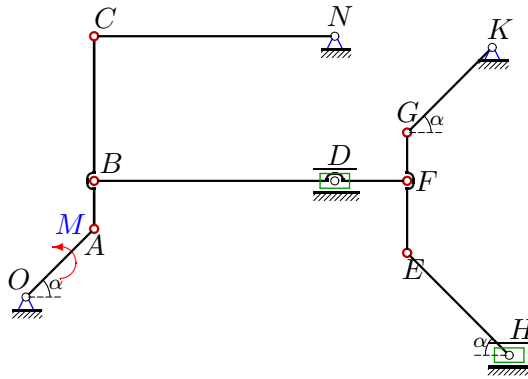
Бадертдинов Р.Р.



$$\begin{aligned} \alpha &= 30^\circ, \\ AB &= 10, BC = 30, \\ DB &= 50, DF = 40, \\ NC &= 40, EH = 30, \\ FE &= 15, FG = 10, \\ OA &= 20, KG = 25. \\ p &= [0.1, 0.3, 0.35, 0.25], \\ T &= [8.5, 7, 6.5, 5.5] \text{ Н.} \end{aligned}$$

Задача L-27.4.

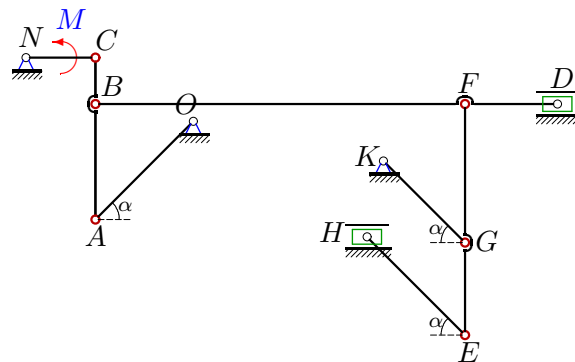
Бойко О.О.



$\alpha = 45^\circ$,
 $AB = 10, BC = 30$,
 $DB = 50, DF = 15$,
 $NC = 50, EH = 30$,
 $FE = 15, FG = 10$,
 $OA = 20, KG = 25$.
 $p = [0.05, 0.35, 0.4, 0.2]$,
 $T = [8, 7, 6, 5.5]$ Н.

Задача L-27.5.

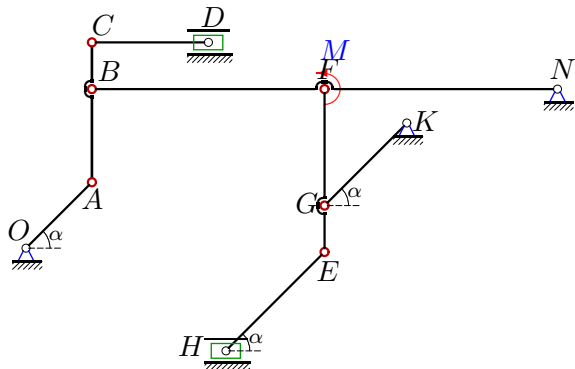
Дегтярев Н.Р.



$\alpha = 45^\circ$,
 $AB = 25, BC = 10$,
 $BF = 80, FD = 20$,
 $NC = 15, EH = 30$,
 $FE = 50, FG = 30$,
 $OA = 30, KG = 25$.
 $p = [0.1, 0.3, 0.4, 0.2]$,
 $T = [8, 7, 6, 5.5]$ Н.

Задача L-27.6.

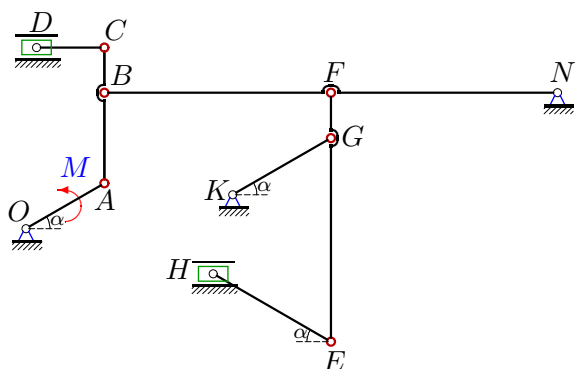
Евстигнеев Д.Е.



$\alpha = 45^\circ$,
 $AB = 20, BC = 10$,
 $BF = 50, NF = 50$,
 $CD = 25, EH = 30$,
 $FG = 25, GE = 10$,
 $OA = 20, KG = 25$.
 $p = [0.05, 0.35, 0.35, 0.25]$,
 $T = [8.5, 7, 6.5, 5.5]$ Н.

Задача L-27.7.

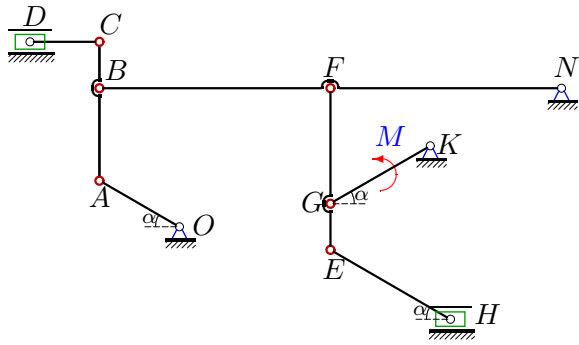
Жаборова К.



$\alpha = 30^\circ$,
 $AB = 20, BC = 10$,
 $BF = 50, NF = 50$,
 $CD = 15, EH = 30$,
 $FG = 10, GE = 45$,
 $OA = 20, KG = 25$.
 $p = [0.1, 0.3, 0.4, 0.2]$,
 $T = [8, 7.5, 6, 5.5]$ Н.

Задача L-27.8.

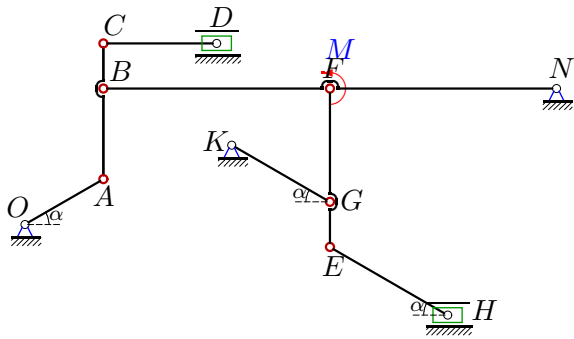
Зимичев В.К.



$\alpha = 30^\circ$,
 $AB = 20, BC = 10,$
 $BF = 50, NF = 50,$
 $CD = 15, EH = 30,$
 $FG = 25, GE = 10,$
 $OA = 20, KG = 25.$
 $p = [0.05, 0.35, 0.35, 0.25],$
 $T = [8.5, 7, 6.5, 5] \text{ Н.}$

Задача L-27.9.

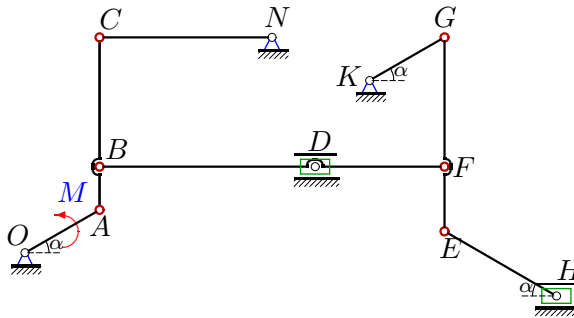
Китаев С.С.



$\alpha = 30^\circ$,
 $AB = 20, BC = 10,$
 $BF = 50, NF = 50,$
 $CD = 25, EH = 30,$
 $FG = 25, GE = 10,$
 $OA = 20, KG = 25.$
 $p = [0.05, 0.35, 0.35, 0.25],$
 $T = [8.5, 7.5, 6, 5] \text{ Н.}$

Задача L-27.10.

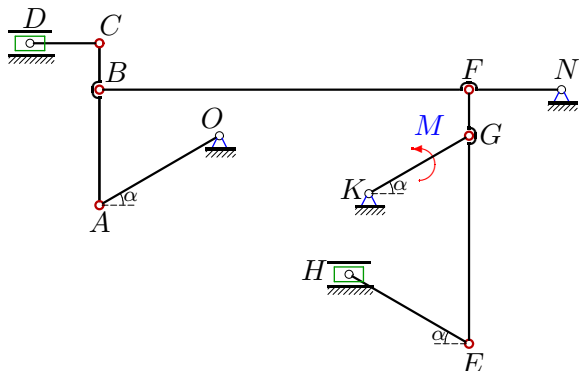
Ковалёв Р.В.



$\alpha = 30^\circ$,
 $AB = 10, BC = 30,$
 $DB = 50, DF = 30,$
 $NC = 40, EH = 30,$
 $FE = 15, FG = 30,$
 $OA = 20, KG = 20.$
 $p = [0.1, 0.3, 0.35, 0.25],$
 $T = [8.5, 7.5, 6.5, 5.5] \text{ Н.}$

Задача L-27.11.

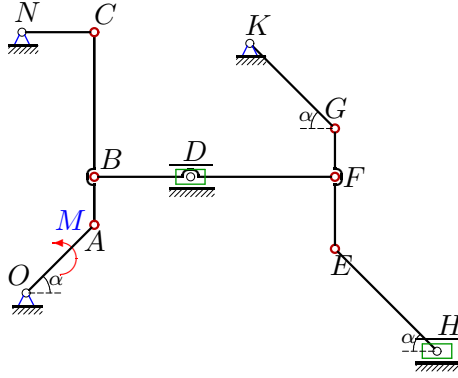
Павлов Д.М.



$\alpha = 30^\circ$,
 $AB = 25, BC = 10,$
 $BF = 80, NF = 20,$
 $CD = 15, EH = 30,$
 $FG = 10, GE = 45,$
 $OA = 30, KG = 25.$
 $p = [0.1, 0.3, 0.35, 0.25],$
 $T = [8.5, 7, 6, 5.5] \text{ Н.}$

Задача L-27.12.

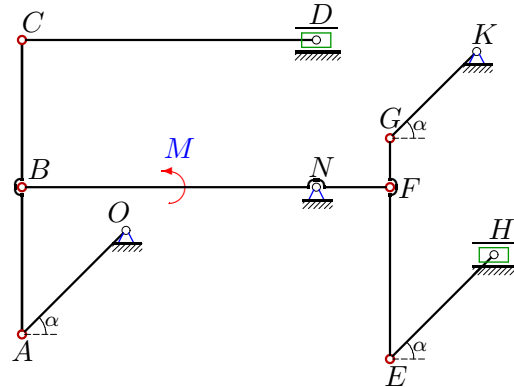
Сайпулаев Г.Р.



$\alpha = 45^\circ$,
 $AB = 10, BC = 30$,
 $DB = 20, DF = 30$,
 $NC = 15, EH = 30$,
 $FE = 15, FG = 10$,
 $OA = 20, KG = 25$.
 $p = [0.1, 0.3, 0.35, 0.25]$,
 $T = [8.5, 7, 6, 5]$ Н.

Задача L-27.13.

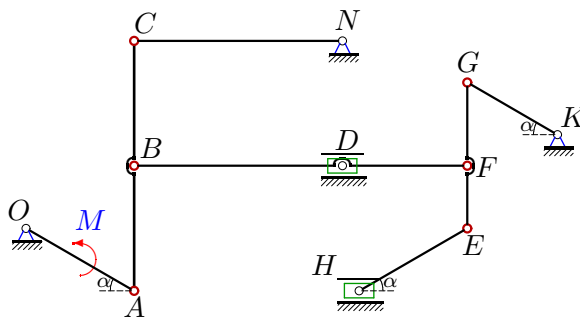
Семенова Г.Д.



$\alpha = 45^\circ$,
 $AB = 30, BC = 30$,
 $NB = 60, NF = 15$,
 $CD = 60, EH = 30$,
 $FE = 35, FG = 10$,
 $OA = 30, KG = 25$.
 $p = [0.05, 0.35, 0.4, 0.2]$,
 $T = [8, 7, 6.5, 5.5]$ Н.

Задача L-27.14.

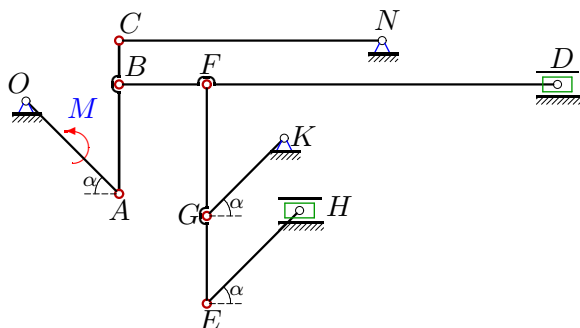
Троцило А.П



$\alpha = 30^\circ$,
 $AB = 30, BC = 30$,
 $DB = 50, DF = 30$,
 $NC = 50, EH = 30$,
 $FE = 15, FG = 20$,
 $OA = 30, KG = 25$.
 $p = [0.1, 0.3, 0.4, 0.2]$,
 $T = [8, 7.5, 6, 5.5]$ Н.

Задача L-27.15.

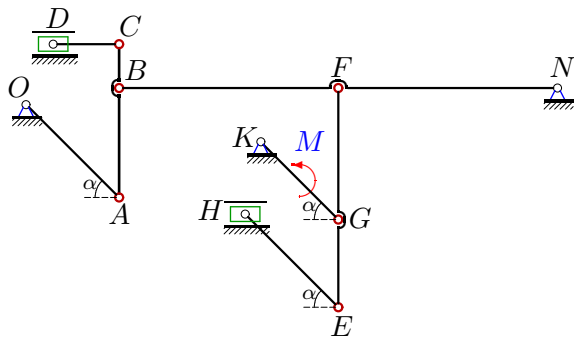
Циммерман А.О



$\alpha = 45^\circ$,
 $AB = 25, BC = 10$,
 $BF = 20, FD = 80$,
 $NC = 60, EH = 30$,
 $FE = 50, FG = 30$,
 $OA = 30, KG = 25$.
 $p = [0.1, 0.3, 0.4, 0.2]$,
 $T = [8, 7, 6.5, 5.5]$ Н.

Задача L-27.16.

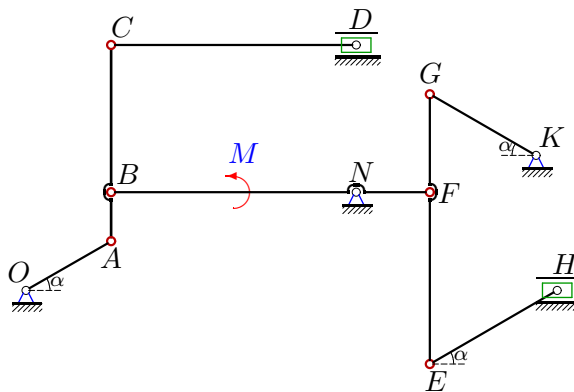
Яцков В.Б.



$\alpha = 45^\circ$,
 $AB = 25, BC = 10,$
 $BF = 50, NF = 50,$
 $CD = 15, EH = 30,$
 $FG = 30, GE = 20,$
 $OA = 30, KG = 25.$
 $p = [0.05, 0.35, 0.4, 0.2],$
 $T = [8, 7.5, 6.5, 5.5] \text{ Н.}$

Задача L-27.17.

Чжу Цзинъюань



$\alpha = 30^\circ$,
 $AB = 10, BC = 30,$
 $NB = 50, NF = 15,$
 $CD = 50, EH = 30,$
 $FE = 35, FG = 20,$
 $OA = 20, KG = 25.$
 $p = [0.1, 0.3, 0.4, 0.2],$
 $T = [8, 7.5, 6.5, 5] \text{ Н.}$