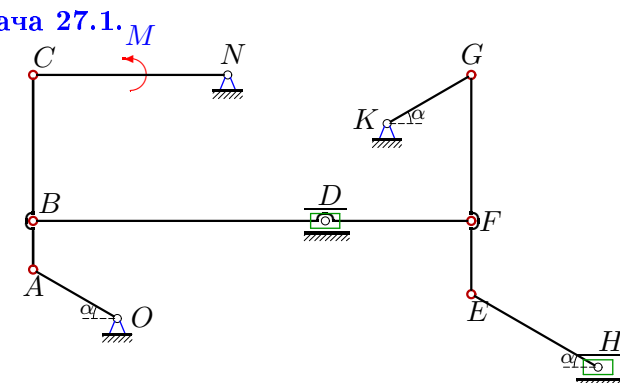
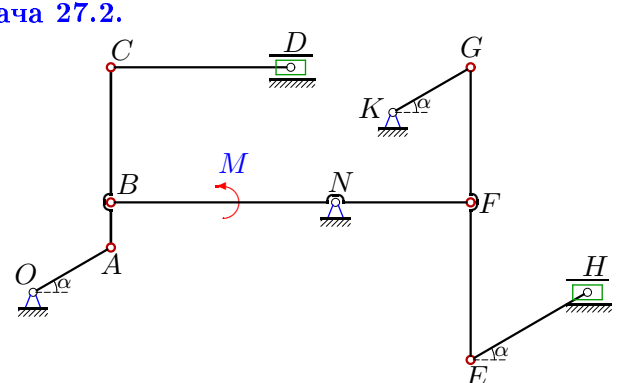
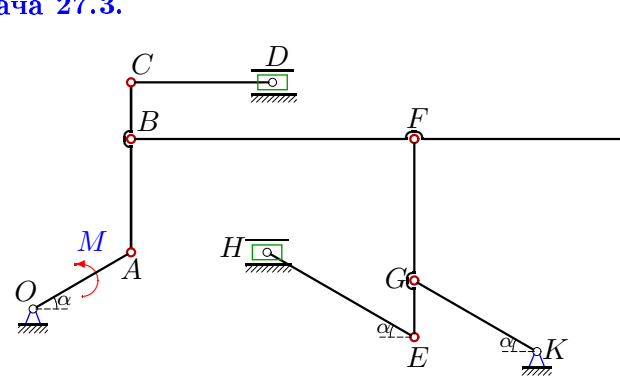


## Условие равновесия механизма

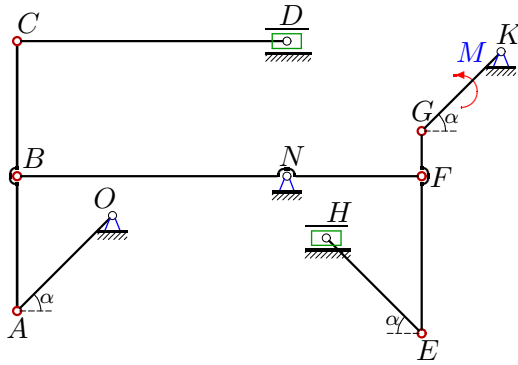
Плоский многосвязный механизм с одной степенью свободы находится в равновесии. К кривошипу  $OA$  приложен момент  $M$ . Размеры даны в сантиметрах. Дан ряд  $p$  распределения дискретной случайной величины силы сопротивления в ползунах  $T_i, i = 1, \dots, 4$ . Найти математическое ожидание момента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

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

<p><b>Задача 27.1.</b></p> 	<p style="text-align: right;"><i>Алешин Владислав</i></p> <p> <math>\alpha = 30^\circ,</math>  <math>AB = 10, BC = 30,</math>  <math>DB = 60, DF = 30,</math>  <math>NC = 40, EH = 30,</math>  <math>FE = 15, FG = 30,</math>  <math>OA = 20, KG = 20.</math>  <math>p = [0.1, 0.3, 0.35, 0.25],</math>  <math>T = [8.5, 7.5, 6.5, 5] \text{ Н}.</math> </p>
<p><b>Задача 27.2.</b></p> 	<p style="text-align: right;"><i>Андреев Данил Романович</i></p> <p> <math>\alpha = 30^\circ,</math>  <math>AB = 10, BC = 30,</math>  <math>NB = 50, NF = 30,</math>  <math>CD = 40, EH = 30,</math>  <math>FE = 35, FG = 30,</math>  <math>OA = 20, KG = 20.</math>  <math>p = [0.05, 0.35, 0.35, 0.25],</math>  <math>T = [8.5, 7.5, 6, 5] \text{ Н}.</math> </p>
<p><b>Задача 27.3.</b></p> 	<p style="text-align: right;"><i>Власов Владимир</i></p> <p> <math>\alpha = 30^\circ,</math>  <math>AB = 20, BC = 10,</math>  <math>BF = 50, NF = 50,</math>  <math>CD = 25, EH = 30,</math>  <math>FG = 25, GE = 10,</math>  <math>OA = 20, KG = 25.</math>  <math>p = [0.05, 0.35, 0.35, 0.25],</math>  <math>T = [8.5, 7, 6.5, 5.5] \text{ Н}.</math> </p>

**Задача 27.4.**

*Глазков Никита*



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

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

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

$$CD = 60, EH = 30,$$

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

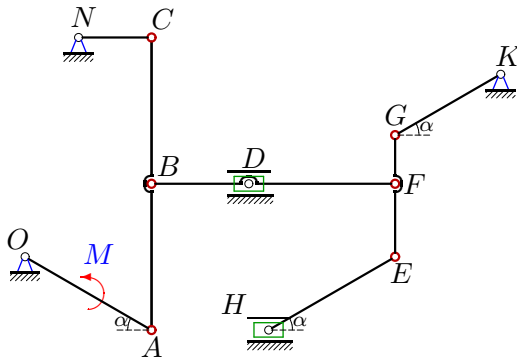
$$OA = 30, KG = 25.$$

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

$$T = [8.5, 7.5, 6.5, 5.5] \text{ Н.}$$

**Задача 27.5.**

*Гриневич Илья Константинович*



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

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

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

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

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

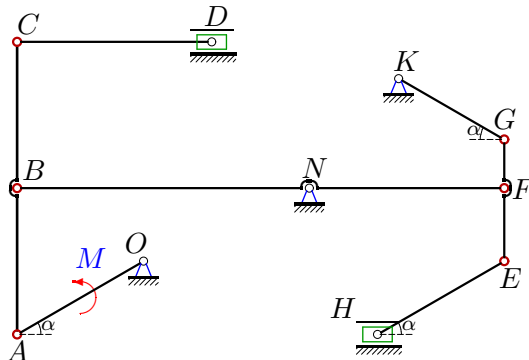
$$OA = 30, KG = 25.$$

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

$$T = [8, 7, 6.5, 5] \text{ Н.}$$

**Задача 27.6.**

*Ершов Никита Сергеевич*



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

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

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

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

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

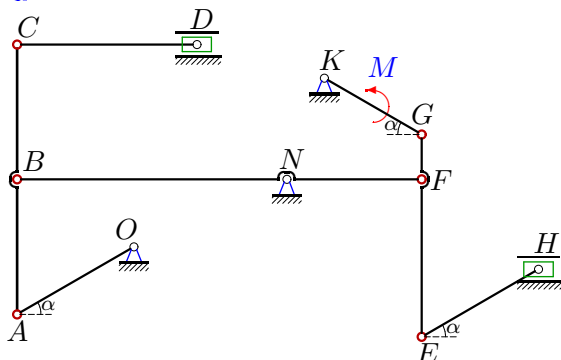
$$OA = 30, KG = 25.$$

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

$$T = [8, 7.5, 6, 5] \text{ Н.}$$

**Задача 27.7.**

*Зыза Анастасия Олеговна*



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

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

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

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

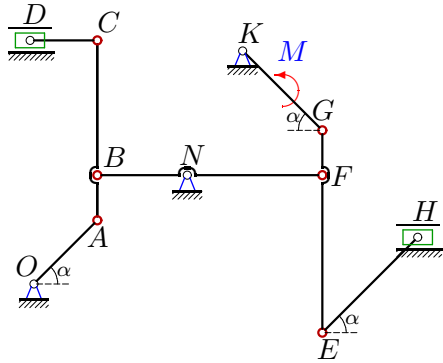
$$FE = 35, FG = 10,$$

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

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

$$T = [8.5, 7.5, 6.5, 5] \text{ Н.}$$

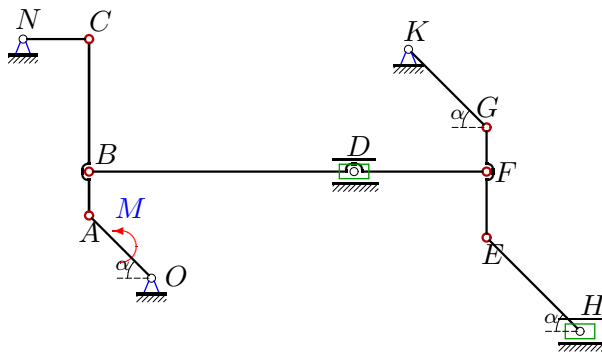
**Задача 27.8.**



*Ирха Кирилл Вадимович*

$\alpha = 45^\circ$ ,  
 $AB = 10, BC = 30$ ,  
 $NB = 20, NF = 30$ ,  
 $CD = 15, EH = 30$ ,  
 $FE = 35, FG = 10$ ,  
 $OA = 20, KG = 25$ .  
 $p = [0.05, 0.35, 0.35, 0.25]$ ,  
 $T = [8.5, 7, 6, 5]$  Н.

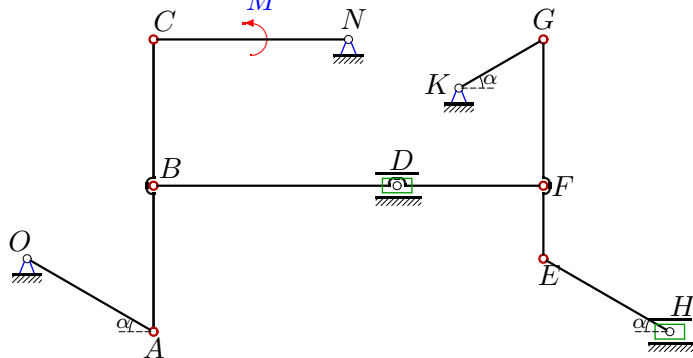
**Задача 27.9.**



*Кундиус Егор Евгеньевич*

$\alpha = 45^\circ$ ,  
 $AB = 10, BC = 30$ ,  
 $DB = 60, DF = 30$ ,  
 $NC = 15, EH = 30$ ,  
 $FE = 15, FG = 10$ ,  
 $OA = 20, KG = 25$ .  
 $p = [0.1, 0.3, 0.4, 0.2]$ ,  
 $T = [8, 7.5, 6.5, 5.5]$  Н.

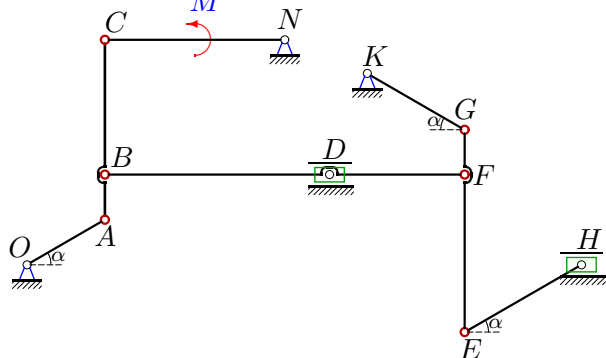
**Задача 27.10.**



*Луценко Петр Викторович*

$\alpha = 30^\circ$ ,  
 $AB = 30, BC = 30$ ,  
 $DB = 50, DF = 30$ ,  
 $NC = 40, EH = 30$ ,  
 $FE = 15, FG = 30$ ,  
 $OA = 30, KG = 20$ .  
 $p = [0.05, 0.35, 0.4, 0.2]$ ,  
 $T = [8, 7, 6, 5.5]$  Н.

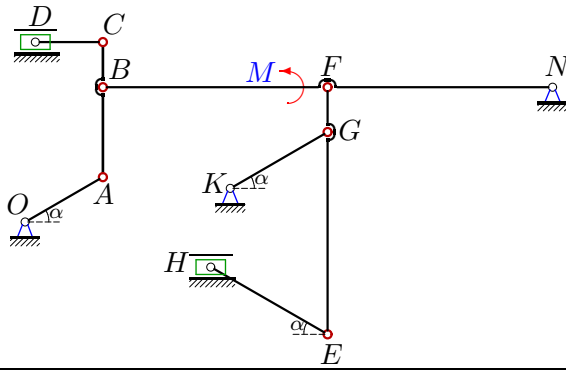
**Задача 27.11.**



*Мазур Илья Викторович*

$\alpha = 30^\circ$ ,  
 $AB = 10, BC = 30$ ,  
 $DB = 50, DF = 30$ ,  
 $NC = 40, EH = 30$ ,  
 $FE = 35, FG = 10$ ,  
 $OA = 20, KG = 25$ .  
 $p = [0.05, 0.35, 0.35, 0.25]$ ,  
 $T = [8.5, 7, 6, 5]$  Н.

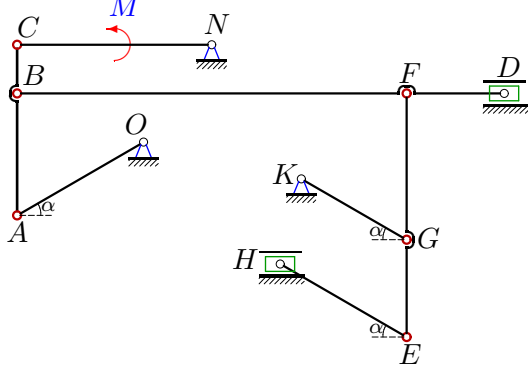
**Задача 27.12.**



*Нечаева Полина Игоревна*

$\alpha = 30^\circ$ ,  
 $AB = 20, BC = 10,$   
 $BF = 50, NF = 50,$   
 $CD = 15, EH = 30,$   
 $FG = 10, GE = 45,$   
 $OA = 20, KG = 25.$   
 $p = [0.05, 0.35, 0.4, 0.2],$   
 $T = [8, 7, 6.5, 5] \text{ Н.}$

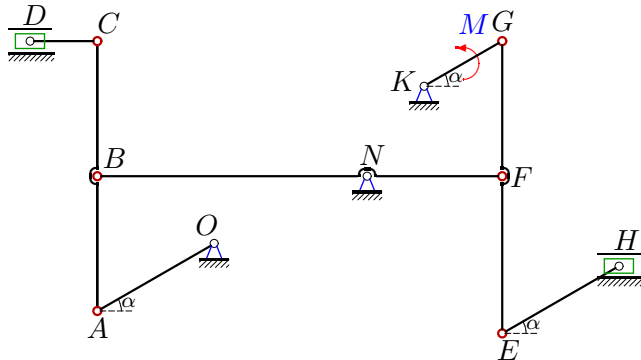
**Задача 27.13.**



*Обухов Семен*

$\alpha = 30^\circ$ ,  
 $AB = 25, BC = 10,$   
 $BF = 80, FD = 20,$   
 $NC = 40, EH = 30,$   
 $FE = 50, FG = 30,$   
 $OA = 30, KG = 25.$   
 $p = [0.1, 0.3, 0.35, 0.25],$   
 $T = [8.5, 7, 6, 5] \text{ Н.}$

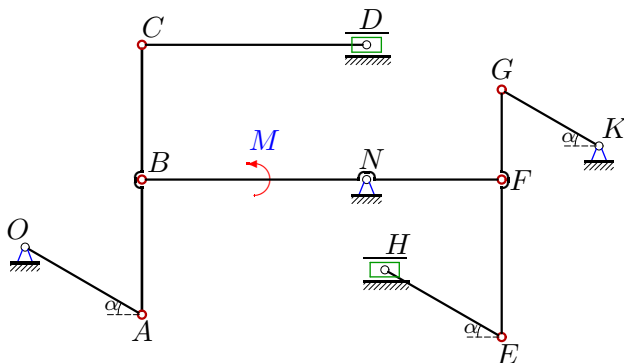
**Задача 27.14.**



*Плеханов Артем*

$\alpha = 30^\circ$ ,  
 $AB = 30, BC = 30,$   
 $NB = 60, NF = 30,$   
 $CD = 15, EH = 30,$   
 $FE = 35, FG = 30,$   
 $OA = 30, KG = 20.$   
 $p = [0.05, 0.35, 0.4, 0.2],$   
 $T = [8, 7.5, 6.5, 5] \text{ Н.}$

**Задача 27.15.**

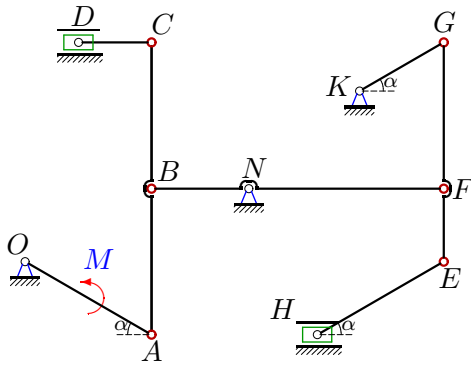


*Селиванов Александр Михайлович*

$\alpha = 30^\circ$ ,  
 $AB = 30, BC = 30,$   
 $NB = 50, NF = 30,$   
 $CD = 50, EH = 30,$   
 $FE = 35, FG = 20,$   
 $OA = 30, KG = 25.$   
 $p = [0.1, 0.3, 0.35, 0.25],$   
 $T = [8.5, 7, 6.5, 5.5] \text{ Н.}$

**Задача 27.16.**

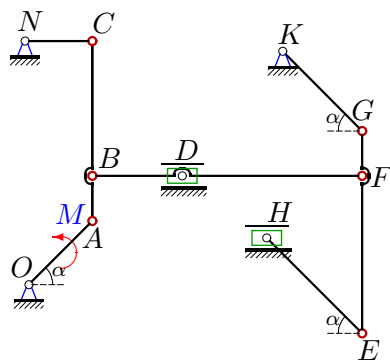
*Ступак Александра Алексеевна*



$\alpha = 30^\circ$ ,  
 $AB = 30, BC = 30,$   
 $NB = 20, NF = 40,$   
 $CD = 15, EH = 30,$   
 $FE = 15, FG = 30,$   
 $OA = 30, KG = 20.$   
 $p = [0.1, 0.3, 0.4, 0.2],$   
 $T = [8, 7.5, 6.5, 5.5] \text{ Н.}$

**Задача 27.17.**

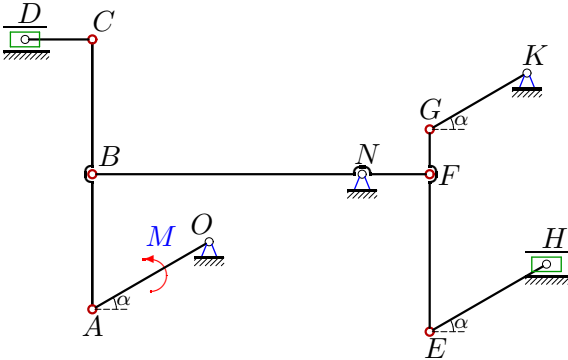
*Сухов Александр*



$\alpha = 45^\circ$ ,  
 $AB = 10, BC = 30,$   
 $DB = 20, DF = 40,$   
 $NC = 15, EH = 30,$   
 $FE = 35, FG = 10,$   
 $OA = 20, KG = 25.$   
 $p = [0.1, 0.3, 0.35, 0.25],$   
 $T = [8.5, 7, 6.5, 5] \text{ Н.}$

**Задача 27.18.**

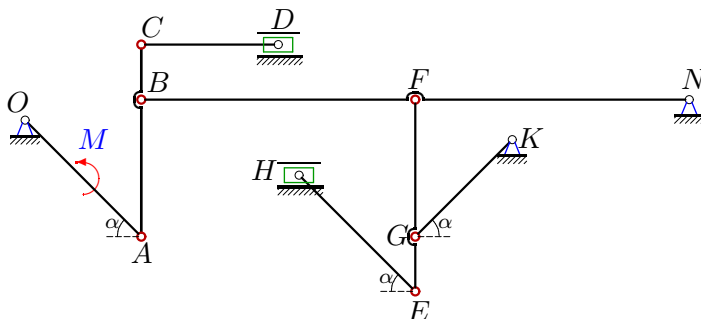
*Терехова Маргарита*



$\alpha = 30^\circ$ ,  
 $AB = 30, BC = 30,$   
 $NB = 60, NF = 15,$   
 $CD = 15, EH = 30,$   
 $FE = 35, FG = 10,$   
 $OA = 30, KG = 25.$   
 $p = [0.1, 0.3, 0.35, 0.25],$   
 $T = [8.5, 7.5, 6.5, 5] \text{ Н.}$

**Задача 27.19.**

*Фернанду Марселину Жулиу*



$\alpha = 45^\circ$ ,  
 $AB = 25, BC = 10,$   
 $BF = 50, NF = 50,$   
 $CD = 25, EH = 30,$   
 $FG = 25, GE = 10,$   
 $OA = 30, KG = 25.$   
 $p = [0.1, 0.3, 0.4, 0.2],$   
 $T = [8, 7, 6.5, 5.5] \text{ Н.}$

