

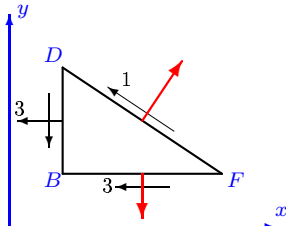
Плоское напряженное состояние

Пластика находится в плоском напряженном состоянии. Даны напряжения, приложенные к ее сторонам (МПа). Дан ряд p распределения дискретной случайной величины коэффициента Пуассона ν . Модуль упругости $E = 1000$ МПа. Найти математическое ожидание M и среднеквадратическое отклонение σ осевых деформаций.

Задача L-25.1.

2

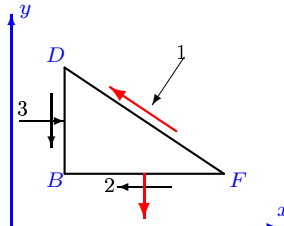
$p = [0.1, 0.3, 0.35, 0.25]$,
 $\nu = [0.4, 0.39, 0.37, 0.36]$, $BF = 4$ см, $BD = 4$ см.



Задача L-25.2.

2

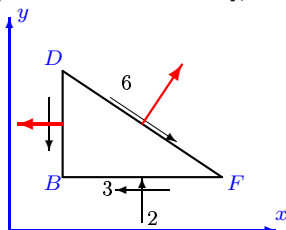
$p = [0.05, 0.35, 0.4, 0.2]$,
 $\nu = [0.4, 0.38, 0.37, 0.35]$, $BF = 4$ см, $BD = 3$ см.



Задача L-25.3.

2

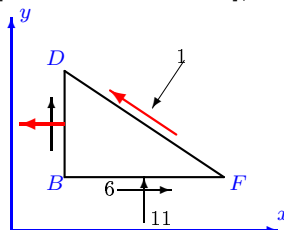
$p = [0.1, 0.3, 0.35, 0.25]$,
 $\nu = [0.4, 0.39, 0.38, 0.36]$, $BF = 4$ см, $BD = 3$ см.



Задача L-25.4.

2

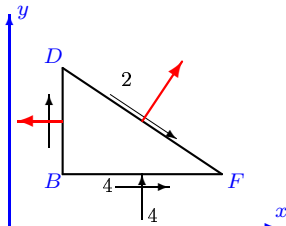
$p = [0.1, 0.3, 0.35, 0.25]$,
 $\nu = [0.4, 0.39, 0.38, 0.37]$, $BF = 4$ см, $BD = 2$ см.



Задача L-25.5.

2

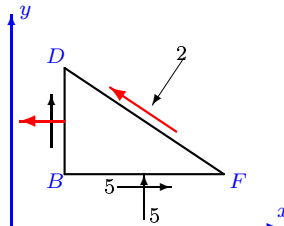
$p = [0.1, 0.3, 0.4, 0.2]$,
 $\nu = [0.5, 0.49, 0.47, 0.45]$, $BF = 4$ см, $BD = 3$ см.



Задача L-25.6.

2

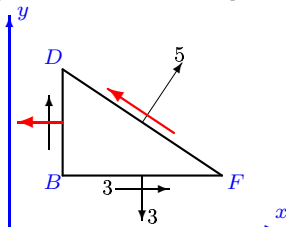
$p = [0.05, 0.35, 0.35, 0.25]$,
 $\nu = [0.3, 0.28, 0.26, 0.24]$, $BF = 4$ см, $BD = 3$ см.



Задача L-25.7.

2

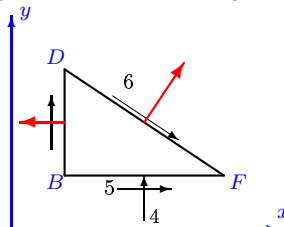
$p = [0.1, 0.3, 0.4, 0.2]$,
 $\nu = [0.5, 0.49, 0.48, 0.46]$, $BF = 4$ см, $BD = 3$ см.



Задача L-25.8.

2

$p = [0.05, 0.35, 0.35, 0.25]$,
 $\nu = [0.3, 0.28, 0.27, 0.26]$, $BF = 3$ см, $BD = 3$ см.

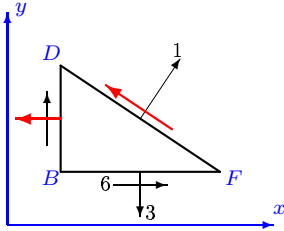


Задача L-25.9.

2

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

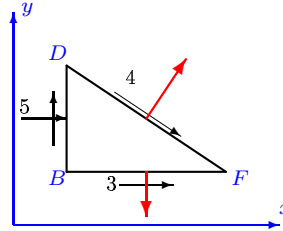
$$\nu = [0.4, 0.38, 0.37, 0.35], \quad BF = 4 \text{ см}, \quad BD = 3 \text{ см}.$$

**Задача L-25.10.**

2

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

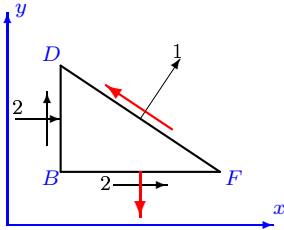
$$\nu = [0.3, 0.28, 0.26, 0.25], \quad BF = 2 \text{ см}, \quad BD = 4 \text{ см}.$$

**Задача L-25.11.**

2

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

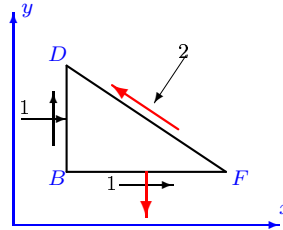
$$\nu = [0.4, 0.38, 0.36, 0.34], \quad BF = 4 \text{ см}, \quad BD = 3 \text{ см}.$$

**Задача L-25.12.**

2

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

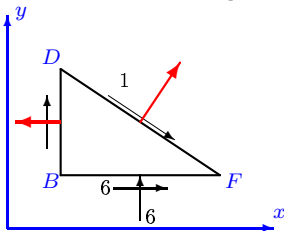
$$\nu = [0.5, 0.49, 0.48, 0.46], \quad BF = 4 \text{ см}, \quad BD = 3 \text{ см}.$$

**Задача L-25.13.**

2

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

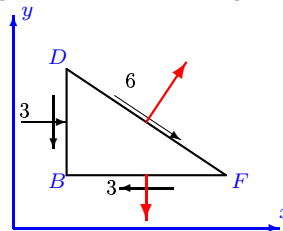
$$\nu = [0.4, 0.38, 0.36, 0.34], \quad BF = 4 \text{ см}, \quad BD = 3 \text{ см}.$$

**Задача L-25.14.**

2

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

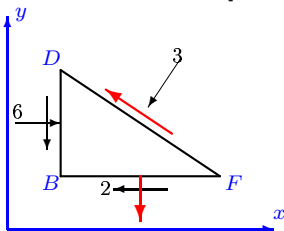
$$\nu = [0.4, 0.39, 0.37, 0.35], \quad BF = 4 \text{ см}, \quad BD = 3 \text{ см}.$$

**Задача L-25.15.**

2

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

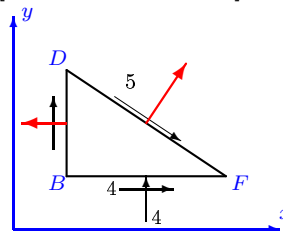
$$\nu = [0.4, 0.39, 0.38, 0.37], \quad BF = 4 \text{ см}, \quad BD = 2 \text{ см}.$$

**Задача L-25.16.**

2

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

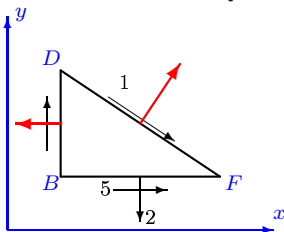
$$\nu = [0.4, 0.39, 0.37, 0.35], \quad BF = 4 \text{ см}, \quad BD = 3 \text{ см}.$$

**Задача L-25.17.**

2

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

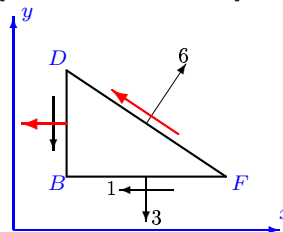
$$\nu = [0.5, 0.49, 0.47, 0.46], \quad BF = 3 \text{ см}, \quad BD = 4 \text{ см}.$$

**Задача L-25.18.**

2

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

$$\nu = [0.3, 0.28, 0.27, 0.25], \quad BF = 4 \text{ см}, \quad BD = 3 \text{ см}.$$

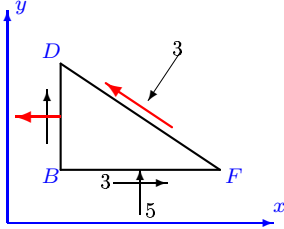


Задача L-25.19.

2

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

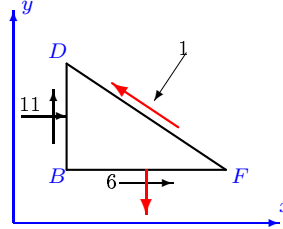
$$\nu = [0.5, 0.49, 0.48, 0.46], \quad BF = 4 \text{ см}, \quad BD = 3 \text{ см}.$$

**Задача L-25.20.**

2

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

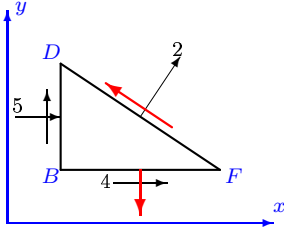
$$\nu = [0.4, 0.38, 0.37, 0.35], \quad BF = 4 \text{ см}, \quad BD = 3 \text{ см}.$$

**Задача L-25.21.**

2

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

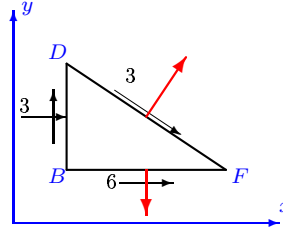
$$\nu = [0.3, 0.28, 0.26, 0.24], \quad BF = 4 \text{ см}, \quad BD = 3 \text{ см}.$$

**Задача L-25.22.**

2

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

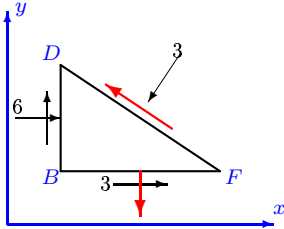
$$\nu = [0.4, 0.39, 0.38, 0.37], \quad BF = 4 \text{ см}, \quad BD = 2 \text{ см}.$$

**Задача L-25.23.**

2

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

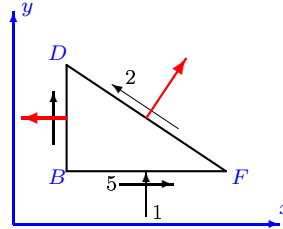
$$\nu = [0.4, 0.38, 0.36, 0.35], \quad BF = 6 \text{ см}, \quad BD = 8 \text{ см}.$$

**Задача L-25.24.**

2

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

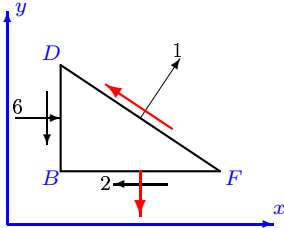
$$\nu = [0.4, 0.39, 0.37, 0.35], \quad BF = 4 \text{ см}, \quad BD = 3 \text{ см}.$$

**Задача L-25.25.**

2

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

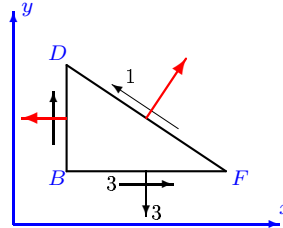
$$\nu = [0.3, 0.28, 0.27, 0.25], \quad BF = 4 \text{ см}, \quad BD = 3 \text{ см}.$$

**Задача L-25.26.**

2

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

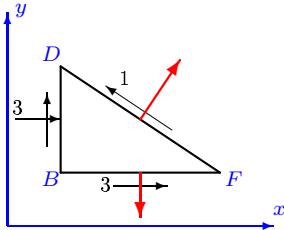
$$\nu = [0.3, 0.28, 0.27, 0.25], \quad BF = 4 \text{ см}, \quad BD = 3 \text{ см}.$$

**Задача L-25.27.**

2

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

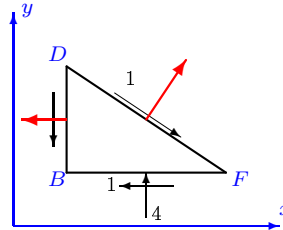
$$\nu = [0.3, 0.28, 0.26, 0.24], \quad BF = 4 \text{ см}, \quad BD = 3 \text{ см}.$$

**Задача L-25.28.**

2

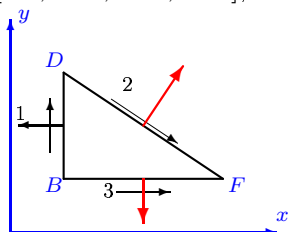
$$p = [0.05, 0.35, 0.35, 0.25],$$

$$\nu = [0.3, 0.28, 0.27, 0.26], \quad BF = 3 \text{ см}, \quad BD = 3 \text{ см}.$$



Задача L-25.29.

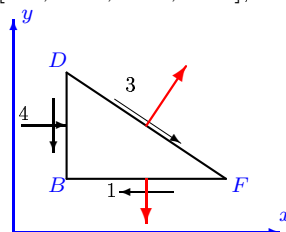
2

 $p = [0.05, 0.35, 0.35, 0.25],$
 $\nu = [0.3, 0.28, 0.27, 0.25], BF = 4 \text{ см}, BD = 3 \text{ см}.$ 

L-25

Задача L-25.30.

2

 $p = [0.1, 0.3, 0.35, 0.25],$
 $\nu = [0.4, 0.39, 0.38, 0.36], BF = 4 \text{ см}, BD = 3 \text{ см}.$ 

Ответы.
Плоское напряженное состояние

22-Jan-16

	σ_x	σ_y	σ	τ_{xy}	τ	σ_{max}	σ_{min}	$M(\varepsilon_x)$	$M(\varepsilon_y)$	$\sigma(\varepsilon_x)$	$\sigma(\varepsilon_y)$
	МПа							$\cdot 10^3$		$\cdot 10^5$	
1	3.000	5.000	7.000	3.000	1.000	7.162	0.838	6.847	-1.859	1.163	9.944
2	-3.000	-2.875	-1.000	2.000	-0.500	-0.937	-4.938	0.896	-4.591	6.227	1.181
3	8.750	-2.000	4.750	3.000	-6.000	9.531	-2.781	10.587	-6.402	3.625	12.426
4	63.000	-11.000	-1.000	-6.000	-26.000	63.483	-11.483	67.876	-35.766	10.818	59.806
5	2.500	-4.000	-5.500	-4.000	-2.000	4.404	-5.904	7.208	-7.996	9.611	7.169
6	16.667	-5.000	-2.000	-5.000	-9.000	17.765	-6.098	19.375	-10.788	10.633	30.974
7	16.556	3.000	5.000	-3.000	-5.667	17.190	2.366	16.052	-5.903	2.888	20.983
8	8.000	-4.000	-3.000	-5.000	-6.000	9.810	-5.810	11.394	-8.484	5.774	9.749
9	13.444	3.000	1.000	-6.000	-3.333	16.177	0.268	16.077	-5.734	0.338	20.398
10	-5.000	-10.500	-8.500	-3.000	-4.000	-3.680	-11.820	-0.530	-10.839	16.830	5.240
11	-2.000	5.687	1.000	-2.000	4.250	6.177	-2.489	7.085	-4.744	4.128	10.243
12	-1.000	-1.063	-2.000	-1.000	0.250	-0.031	-2.032	0.947	-2.017	2.480	0.038
13	-0.417	-6.000	-9.750	-6.000	-1.000	3.409	-9.826	6.996	-11.070	16.295	5.654
14	-3.000	-13.750	-7.000	3.000	-6.000	-2.219	-14.531	3.215	-13.700	24.915	3.806
15	-6.000	-4.250	-3.000	2.000	-0.500	-2.942	-7.308	-0.147	-6.183	6.885	2.772
16	8.750	-4.000	-3.250	-4.000	-5.000	9.901	-5.151	11.827	-8.854	8.832	16.977
17	1.167	2.000	-3.333	-5.000	-1.000	6.601	-3.434	8.239	-6.583	4.620	8.880
18	8.667	3.000	6.000	1.000	-3.000	8.838	2.829	8.074	0.442	3.795	11.857
19	8.556	-5.000	-3.000	-3.000	-5.667	9.190	-5.634	11.900	-10.055	6.877	11.218
20	-11.000	13.625	-1.000	-6.000	13.500	15.009	-12.384	19.604	-17.953	15.616	18.926
21	-5.000	11.937	2.000	-4.000	9.250	12.835	-5.897	14.391	-9.285	10.282	22.378
22	-3.000	-19.500	-21.000	-6.000	-3.000	-1.049	-21.451	7.156	-21.050	20.208	0.988
23	-6.000	10.333	-3.000	-3.000	7.000	10.867	-6.534	13.265	-10.522	9.030	15.018
24	-2.250	-1.000	-6.250	-5.000	2.000	3.414	-6.664	5.906	-7.941	11.426	5.854
25	-6.000	1.937	1.000	2.000	3.250	2.413	-6.475	4.161	-7.127	8.688	3.237
26	2.667	3.000	0.000	-3.000	1.000	5.838	-0.171	5.884	-1.748	0.230	7.832
27	-3.000	-2.667	-5.667	-3.000	1.000	0.171	-5.838	1.713	-5.883	10.179	0.299
28	-2.000	-4.000	-2.000	1.000	-1.000	-1.586	-4.414	-0.383	-3.982	4.387	1.576
29	1.000	-4.917	-5.667	-3.000	-2.000	2.255	-6.172	3.921	-6.780	8.280	3.025
30	-4.000	-9.667	-6.667	1.000	-3.000	-3.829	-9.838	-0.090	-8.383	12.827	4.992

L-25 файл о25L2A