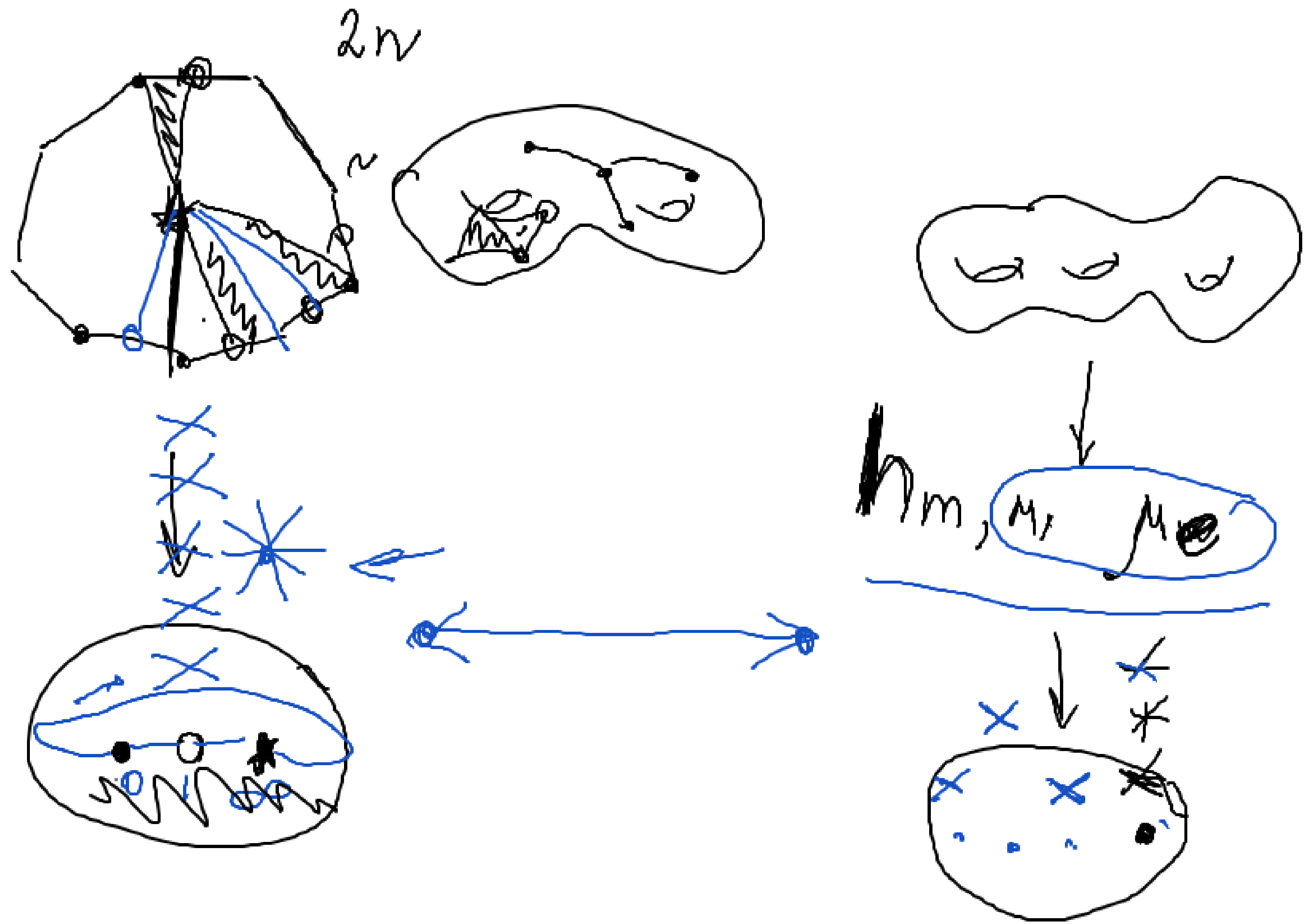
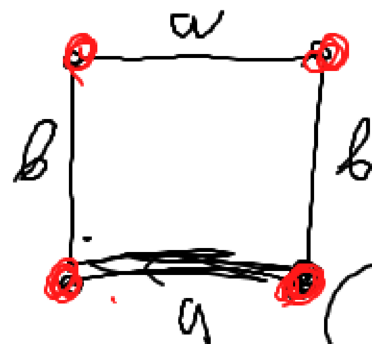
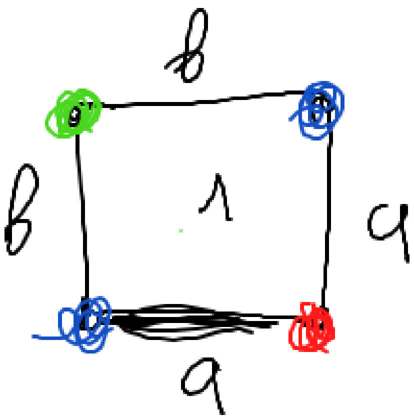
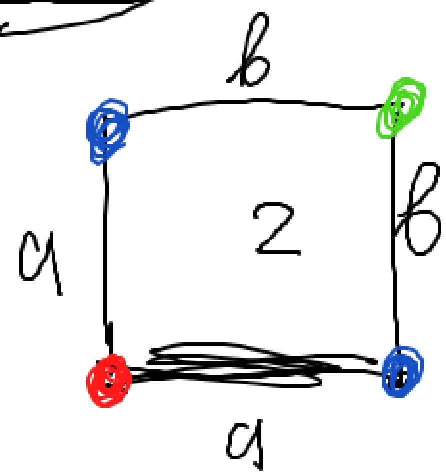

2n

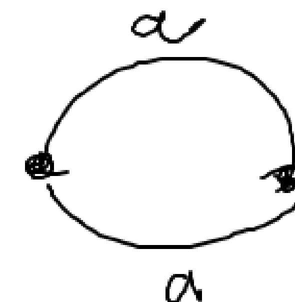
$\boxed{n=2}$



$$T_n(N) = \sum_{\text{по всем склейкам}} N^{\#\text{верш}}$$







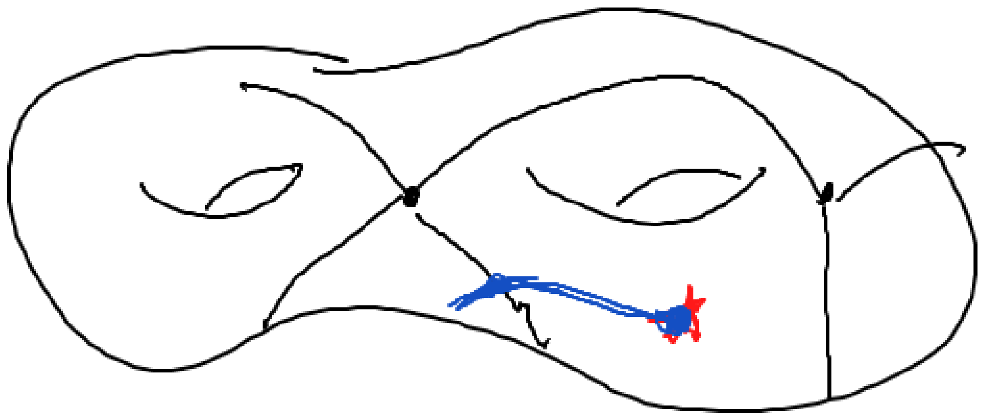
$$2-2g = \#\text{вер} - n + 1$$

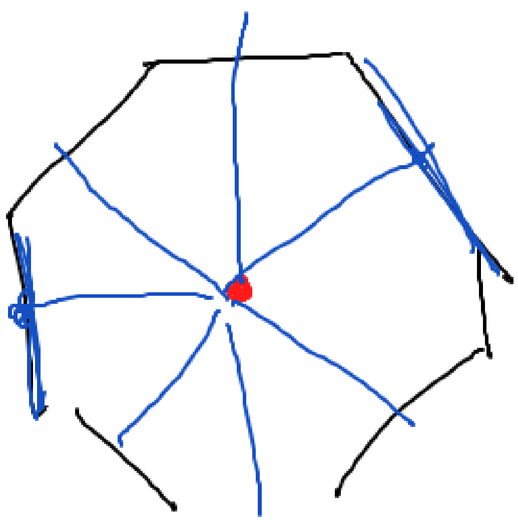
$$T_1 = N^2 \qquad T_2 = 2 \cdot N^3 + 1 \cdot N^1 = \sum_{\text{склейки}} \cdot N^{n+1-2g}$$

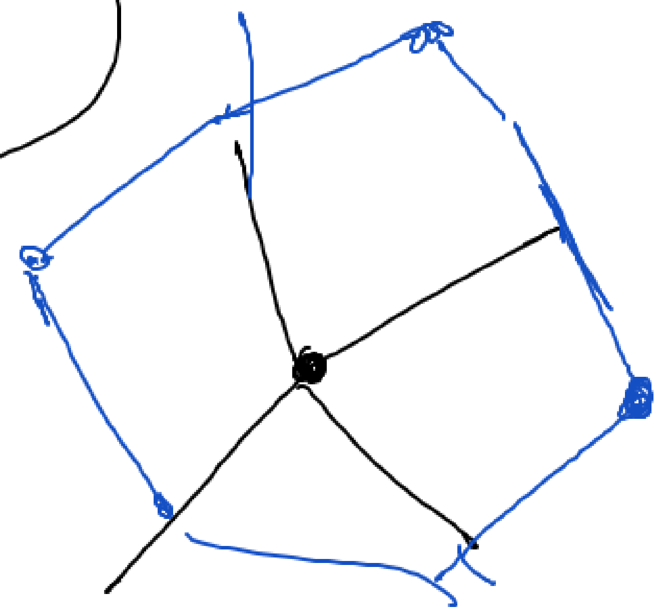
$$T_n = \sqcup\, N^{n+1}$$

$$\underline{\underline{T_n}}$$

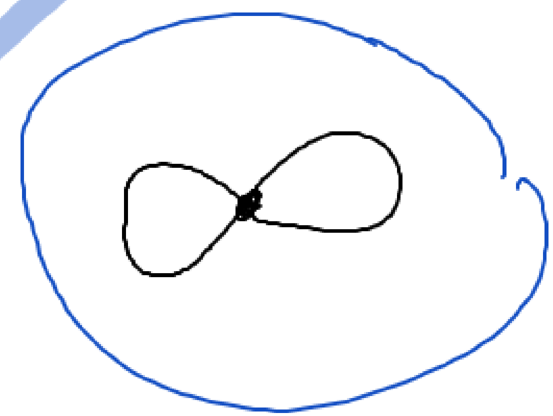
$$\boxed{T(N,s) = 1 + 2Ns + 2s \sum_{n=1}^{\infty} \frac{T_n(N)}{(2n-1)!!} s^n = \left(\frac{1+s}{1-s}\right)^N .. }$$

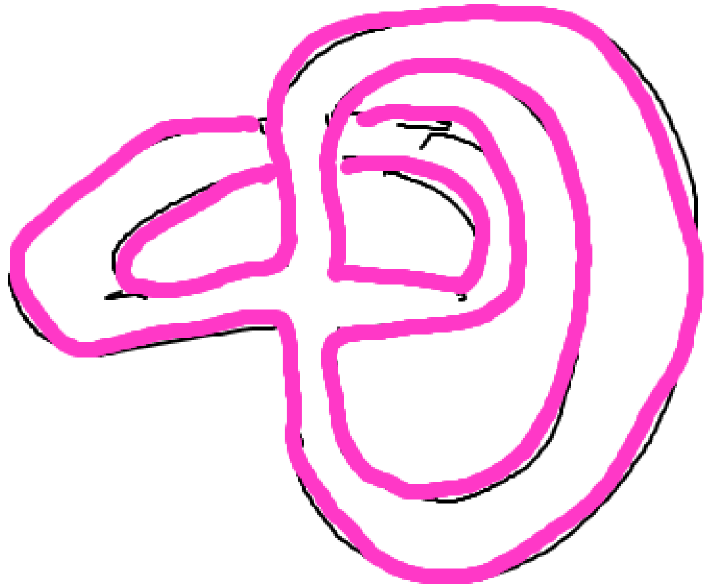


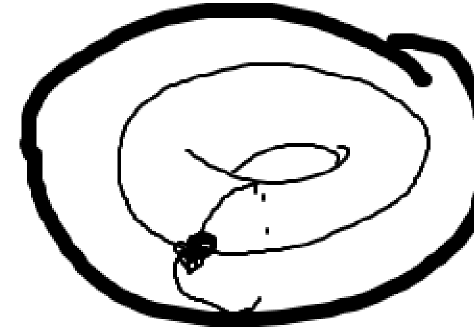




2 h

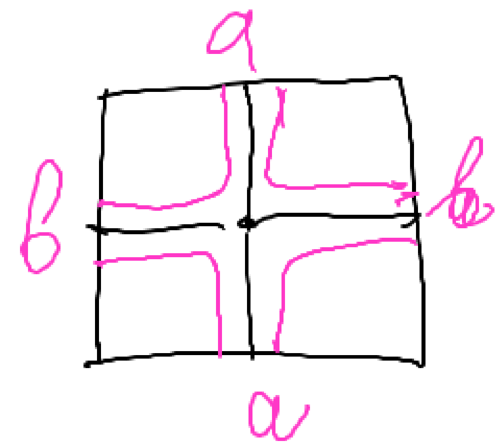






$$\sum N^{\#\text{граней}}$$

по всем склейкам



$$\int_{-\infty}^{+\infty} e^{-x^2}\,dx = \sqrt{\pi}$$

$$\int_{-\infty}^{+\infty} e^{-\overset{>0}{b}x^2}\,dx = \left[\; y = \sqrt{b}\,x \;\right]$$

$$= \frac{\sqrt{\pi}}{\sqrt{b}}$$

$$\int_{-\infty}^{+\infty} x^2 e^{-x^2}\,dx = \left[\begin{array}{l} \int u\,dv = uv - \int v\,du \\ d e^{-x^2} = e^{-x^2}\cdot(-2x)\cdot dx \end{array}\right.$$

$$= \frac{1}{-2}\int \overset{u}{x}\,\overset{dv}{-2x e^{-x^2}}\,dx = -\frac{1}{2}\,x e^{-x^2}\Big|_{-\infty}^{+\infty} + \frac{1}{2}\int_{-\infty}^{+\infty} e^{-x^2}\,dx$$

$$= \frac{1}{2}\sqrt{\pi}$$

$(B(\ ,\ ))$ – квадратичн. положит. опр. форма
B – билин. форма симм. невырожд!

$$\int_{\mathbb{R}^n} e^{-(x,Bx)}\, dx_1 \dots dx_n$$

$$(x, Bx) = x_1 \dots x_n B \begin{pmatrix} x_1 \\ \vdots \\ x_n \end{pmatrix}$$

ортогон. преобр. получаем →

$$\int_{\mathbb{R}^n} e^{-b_1 y_1^2 - b_2 y_2^2 - b_3 y_3^2 \dots - b_n y_n^2}\, dy_1 \dots dy_n = \prod_k \int_{\mathbb{R}} e^{-b_k y_k^2}\, dy_k = \frac{(\sqrt{\pi})^n}{\sqrt{\det B}}$$

$$H_N \subset M_{N\times N}(\mathbb{C})$$

$$\hat{A} \qquad \overline{A}^{T} = A$$

$$\begin{pmatrix} h_{ii} & h_{ij} = \operatorname{Re} h_{ij} + i \operatorname{Im} h_{ij} \\ & \end{pmatrix} \qquad N + \frac{N\cdot(N-1)}{2}\cdot 2 = N^2$$

$$\int_{H_N} e^{-\mathrm{Tr}(H^2)} \prod_{i=1}^{N} dh_{ii} \prod_{1\le i<j\le N} d\,\mathrm{Re}\,h_{ij}\, d\,\mathrm{Im}\,h_{ij}$$

$$h_{ji} = \overline{h_{ij}}$$

$$\mathrm{Tr}\,H^2 = \sum_{i=1}^{N}\sum_{j=1}^{N} h_{ij}\overline{h_{ij}} = \underline{\sum h_{ii}^2} + \sum_{1\le i<j\le N} 2(\mathrm{Re}\,h_{ij})^2 + 2(\mathrm{Im}\,h_{ij})^2$$

$$\int_{H_N} e^{-\mathrm{Tr}(H^2)}\, dH = \frac{(\sqrt{\pi})^{N^2}}{2^{\frac{N^2-N}{2}}}$$

$$1 \cdot \quad 1 \cdot 1 \quad \overbrace{\qquad\qquad\qquad}^{N^2-N}$$

$$N$$

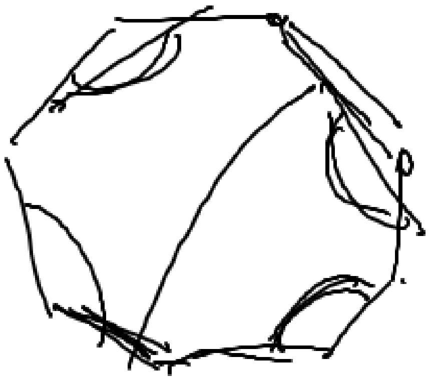
$$\langle f(p) \rangle_{x_1 \ldots x_n} = \frac{\sqrt{\det B}}{(\sqrt{\pi})^n} \int_{\mathbb{R}^n} f(x_1 \ldots x_n)\, e^{-(x,Bx)}\, dx_1 \ldots dx_n$$

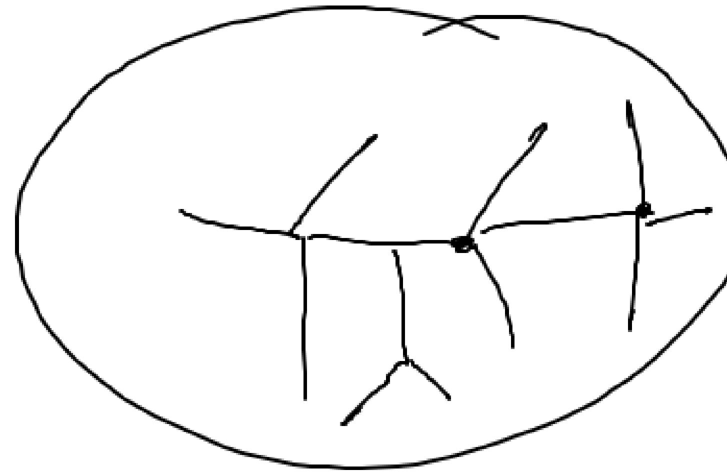
линейные

Формула Вика

$$\langle f_1 \ldots f_n \rangle = \sum \langle f_{i_1} f_{i_2} \rangle \langle f_{i_3} f_{i_4} \rangle \ldots \langle \ \rangle$$

по всем спариваниям.

1  $2n$



Cat_n