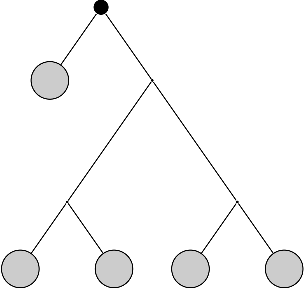
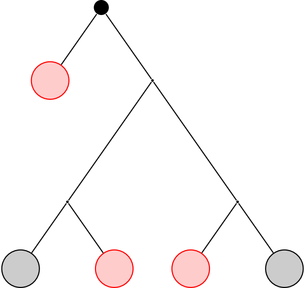
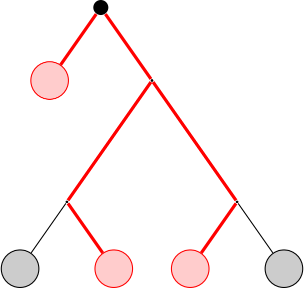
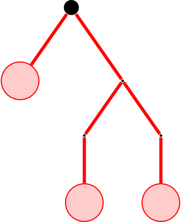
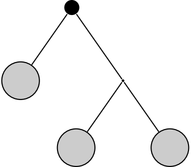
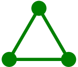
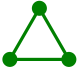


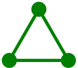


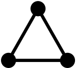
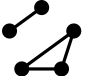


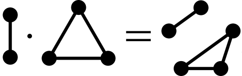


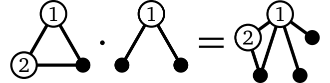


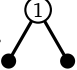
$\mathrm{ex}\Big($ ;  $\Big) := \max_{\mathcal{G}} \Big\{ \phi\big($  $\big) : \phi\Big($  $\Big) = 0 \Big\}.$

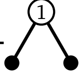
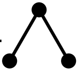
$\mathrm{ex}\Big($  $;$  $\Big) \geq \frac{1}{2},$

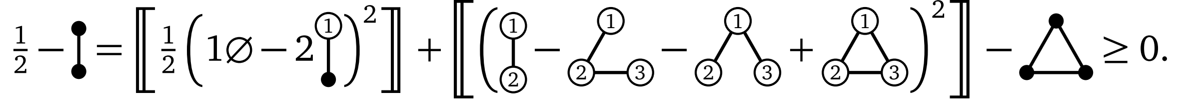
$(\mathcal{G}) \cdot$  $(\mathcal{G}) =$  $(\mathcal{G})$.


,


1
2
1
1
2

$\left(1\varnothing - 2\right.$  $\left.\right)^2 = \varnothing - 4$  $+ 4$  $\geq 0.$

$\Big[\!\Big[\Big(1\varnothing - 2$  $\Big)^2\Big]\!\Big] = \Big[\!\Big[\varnothing - 4$  $+ 4$  $\Big]\!\Big] = \varnothing - 4$  $+ 4$  $\geq 0.$



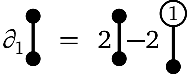
$$[\![f^2]\!] = \langle cc^\top, [\![\mathcal{F}\mathcal{F}^\top]\!]\rangle$$

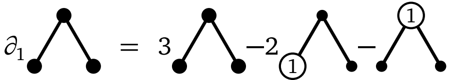
$$\langle M, [\![\mathcal{F}\mathcal{F}^\top]\!] \rangle$$

$H -$  $^{|E(H)|} \geq 0.$

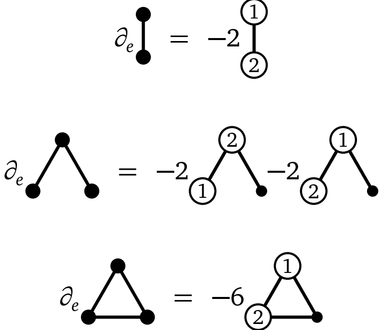
$$\nabla_{v} f(x) = \lim_{h \to 0} \frac{f(x+hv) - f(x)}{h}$$

$$\partial_v H := \lim_{i\to\infty} \frac{(H \text{ density in } (G_i - v)) - (H \text{ density in } G_i)}{i^{-1}}$$

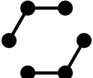

∂_1 = 2 −2 1


∂_1 = 3 −2 1 − 1

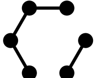
$$\partial_e H := \lim_{i \to \infty} \frac{(H \text{ density in } (G_i - e)) - (H \text{ density in } G_i)}{i^{-2}}$$


∂_e = -2
∂_e = -2 -2
∂_e = -6

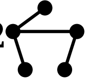
$$\frac{1}{4}\left[\!\left[\begin{matrix}\textcircled{1}\\ | \\ \textcircled{3}\end{matrix}\partial_{\mathrm{swap}}(P_3 - e^3)\right]\!\right] =$$



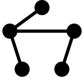
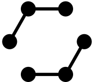
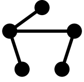
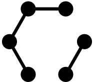
$+$

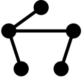
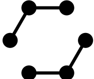
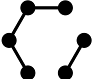


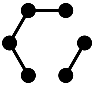
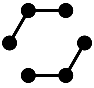
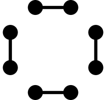
-2

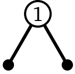
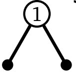


≥ 0

But  $-$  $= \mathrm{SOS} \geq 0$ and  $-$  $= \mathrm{SOS} \geq 0$.

Thus  =  = .

This proves  =  ≥  by induction.

 $(\mathcal{G}) := \lim_{i\to\infty} \mathbb{P}\Big[\sigma_i\Big($  $\Big)$ is a subgraph of $G_i \mid \sigma_i(1) = 1\Big]$

$$\partial_{\mathrm{swap}}(P_3 - e^3) =$$