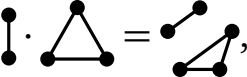
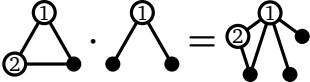


$$ex \left(\begin{array}{c} \text{orange edge} \\ \text{green triangle} \end{array} \right) := \max_c \left\{ \phi \left(\begin{array}{c} \text{orange edge} \end{array} \right) : \phi \left(\begin{array}{c} \text{green triangle} \end{array} \right) = 0 \right\}.$$

$$\text{ex}\left(\begin{array}{c} \text{orange path of length 2} \\ \text{green triangle} \end{array}\right) \geq \frac{1}{2},$$

$$\phi \left(\begin{array}{c} \bullet \\ | \\ \bullet \end{array} \right) \phi \left(\begin{array}{c} \bullet \\ / \quad \backslash \\ \bullet \quad \bullet \end{array} \right) = \phi \left(\begin{array}{c} \bullet \\ / \quad \backslash \\ \bullet \quad \bullet \\ | \quad | \\ \bullet \quad \bullet \end{array} \right) \cdot$$





$$\left(1\phi - 2\begin{array}{c} \textcircled{1} \\ | \\ \bullet \end{array}\right)^2 = \phi - 4\begin{array}{c} \textcircled{1} \\ | \\ \bullet \end{array} + 4\begin{array}{c} \textcircled{1} \\ / \quad \backslash \\ \bullet \quad \bullet \end{array} \geq 0.$$

$$\left[1\emptyset - 2 \begin{array}{c} \textcircled{1} \\ | \\ \bullet \end{array} \right]^2 = \emptyset - 4 \begin{array}{c} \bullet \\ | \\ \bullet \end{array} + 4 \begin{array}{c} \bullet \\ / \quad \backslash \\ \bullet \quad \bullet \end{array} \geq 0.$$

$$\frac{1}{2} - \text{diagram} = \left[\frac{1}{2} \left(1 \text{diagram} - 2 \text{diagram} \right)^2 \right] + \left[\left(\text{diagram} - \text{diagram} - \text{diagram} + \text{diagram} \right)^2 \right] - \text{diagram} \geq 0.$$

LEVEL 21
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$$H \text{ --- } \begin{array}{c} \bullet \\ | \\ \bullet \end{array} \quad |E(H)| \geq 0.$$

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

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

$$\partial_1 \text{ (edge)} = 2 \text{ (edge)} - 2 \text{ (edge with top vertex labeled 1)}$$

$$\partial_1 \text{ (triangle)} = 3 \text{ (triangle)} - 2 \text{ (triangle with bottom-left vertex labeled 1)} - \text{ (triangle with top vertex labeled 1)}$$

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

$$\partial_e \text{ (edge) } = -2 \text{ (edge with nodes 1 and 2)}$$

$$\partial_e \text{ (V-shape) } = -2 \text{ (V-shape with nodes 1 and 2 at base)} - 2 \text{ (V-shape with nodes 1 and 2 at top)}$$

$$\partial_e \text{ (triangle) } = -6 \text{ (triangle with nodes 1 and 2 at two vertices)}$$