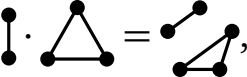


$$ex \left(\begin{array}{c} \bullet \\ \text{---} \\ \bullet \end{array} \right) := \max_c \left\{ \phi \left(\begin{array}{c} \bullet \\ \text{---} \\ \bullet \end{array} \right) : \phi \left(\begin{array}{c} \bullet \\ \text{---} \\ \bullet \end{array} \right) = 0 \right\}.$$

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

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





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

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

$$\frac{1}{2} - \text{edge} = \left[\frac{1}{2} \left(1\varnothing - 2 \text{edge} \right)^2 \right] + \left[\left(\text{edge} - \text{path}_2 - \text{path}_3 + \text{triangle} \right)^2 \right] - \text{triangle} \geq 0.$$

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