

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