

$$\leq \frac{H}{\pi} + \frac{\log H}{\pi} + \frac{1}{\pi} + \frac{1}{\pi} = \frac{H}{\pi} + \frac{\log H}{\pi} + \frac{2}{\pi}$$

$$\leq \frac{1}{\sqrt{\pi}} \left(\frac{1}{\sqrt{\pi}} + \frac{1}{\sqrt{\pi}} \right) = \frac{2}{\sqrt{\pi}}$$

$$\leq \text{[diagram 1]} \cdot \text{[diagram 2]} : \quad \text{[diagram 3]} = \text{[diagram 4]}$$

$$\leq \frac{1}{\sqrt{\pi}} \left(\frac{1}{\sqrt{\pi}} + \frac{1}{\sqrt{\pi}} \right) = \frac{2}{\sqrt{\pi}}$$