

4.27
k8

$$n=k+1 \quad \frac{1}{k+2} + \frac{1}{k+3} + \dots + \frac{1}{3k+1} > \frac{1}{3k+2} + \frac{1}{3k+3} + \frac{1}{3k+4} \stackrel{?}{>} 1 \quad / + \frac{1}{k+1}$$

$$\frac{\frac{1}{k+1} + \frac{1}{k+2} + \dots + \frac{1}{3k+1} + \frac{1}{3k+2} + \frac{1}{3k+3} + \frac{1}{3k+4}}{\cancel{1} + \frac{1}{3k+2} + \frac{1}{3(k+1)} + \frac{1}{3k+4} \stackrel{?}{>} \cancel{1} + \frac{1}{k+1} \quad / - \frac{1}{3(k+1)}}$$

$$\frac{3k+4+3k+2}{(3k+2)(3k+4)} \stackrel{?}{>} \frac{3-1}{3(k+1)}$$

$$\frac{6(k+1)}{(3k+2)(3k+4)} \stackrel{?}{>} \frac{2}{3(k+1)}$$

$$18(k+1)^2 \stackrel{?}{>} 2(9k^2+18k+8) \quad /: 2$$

$$9k^2+18k < 9 > 9k^2+18k < 8$$