

2.7.1
11

$$n=1$$

$$\frac{1}{2} + \frac{1}{2} = 1 \quad \checkmark$$

$$n=k+1$$

$$1 \cdot 3 \cdots (2n-1)(2n+1) \stackrel{?}{=} \underbrace{\left(\frac{n+1}{2} + \frac{1}{2} \right) \cdot \left(\frac{n+1}{2} + 1 \right) \cdot \left(\frac{n+1}{2} + \frac{3}{2} \right) \cdots \left(\frac{n+1}{2} + \frac{n-1}{2} \right) \cdot \left(\frac{n+1}{2} + \frac{n}{2} \right) \cdot \left(\frac{n+1}{2} + \frac{n+1}{2} \right)}_{\text{product of } n \text{ terms}}$$

$$\frac{1 \cdot 3 \cdots (2n-1)(2n+1)}{2n+1} \stackrel{?}{=} \frac{1 \cdot 3 \cdot 5 \cdots (2n-1)}{\frac{n+1}{2}} \cdot (n+1)$$

$$2n+1 = 2n+1$$