9. • $\sum_{i=1}^{n}(2\cdot i-1)=n^2$

$$\sum_{i=1}^{n}(2\cdot i-1) = 2n-1+\sum_{i=1}^{n-1}(2i-1)$$

$$= 2n-1+(n-1)^2 =$$

$$= n^2-2n-1+2n-1=n^2$$

$$\| \checkmark$$

$$\sum_{i=1}^{n}(2\cdot i-1)=n^2$$

$$\sum_{k=1}^{n} k^3 = \left(\sum_{k=1}^{n} k\right)^2$$

$n=m$

$$\sum_{k=1}^{n} k^3 = \sum_{k=1}^{n-1} k^3 + n^3$$

$$= n^3 + \left(\sum_{k=1}^{n-1} k^3\right)$$

$$= n^3 + \left(\sum_{k=1}^{n-1} k\right)^2$$

$$= n^3 + \left(\frac{(n-1)n}{2}\right)^2 =$$

$$= n^3 + \frac{1}{4}n^2(n-1)^2 =$$

$$= n^3 + \frac{1}{4}n^2(n^2-2n+1) =$$

$$= n^3 + \frac{1}{4}(n^4-2n^3+n^2) =$$

$$= n^3 + \frac{1}{4}n^4 - \frac{1}{2}n^3 + \frac{1}{4}n^2 =$$

$$= \frac{1}{4}n^4 + \frac{1}{2}n^3 + \frac{1}{4}n^2 =$$

$$= \frac{1}{4}n^2(n^2+2n+1) =$$

$$= \frac{1}{4}n^2(n+1)^2 = \left(\frac{n(n+1)}{2}\right)^2 = \left(\sum_{k=0}^{n} k\right)^2$$