

$$S_m = \sum_{i=0}^m (a + b \cdot i) \rightarrow \sum_{(m-1)=0}^m (a + b \cdot (m-1)) \rightarrow$$

$$\sum_{(m-1)=0}^m (a + b \cdot m - b \cdot i) \rightarrow$$

$$2S_m = \sum_{i=0}^m (a + b \cdot i) + \sum_{i=0}^m (a + b \cdot m - b \cdot i) \rightarrow$$

$$2S_m = \sum_{i=0}^m (a + \cancel{b \cdot i} + a + b \cdot m - \cancel{b \cdot i}) \rightarrow$$

$$2S_m = \sum_{i=0}^m (2a + b \cdot m) \rightarrow 2a + b \cdot m \cdot \sum_{i=0}^m 1 \rightarrow$$

$$2S_m = (2a + b \cdot m) \cdot (m+1)$$

$$S_m = \frac{(2a + b \cdot m)(m+1)}{2}$$