$$\sum_{k=1}^{n} \frac{1}{k^2+1}.$$

$$S_n = \sum_{k=1}^{n} a_k = 0 + a_1 + a_2 + a_3 + \cdots + a_n.$$

$$S = 0.$$

$$S = S + a_1.$$

$$S = S + a_2.$$

$$z = 1.$$