$$\int_{1}^{2} x dx = \frac{3}{2}$$

$$\left(\sum_{k=1}^{n} a_{k}b_{k}\right)^{2} \leq \left(\sum_{k=1}^{n} a_{k}^{2}\right) \left(\sum_{k=1}^{n} b_{k}^{2}\right)$$

$$\left(\sum_{k=1}^{n} a_k b_k\right)^2 \le \left(\sum_{k=1}^{n} a_k^2\right) \left(\sum_{k=1}^{n} b_k^2\right)$$

$$\left(\sum_{k=1}^{n} a_k b_k\right)^2 \le \left(\sum_{k=1}^{n} a_k^2\right) \left(\sum_{k=1}^{n} b_k^2\right)$$