Legyen $f(x)$ konvex függvény, legyen $u_1 \geqq u_2 \geqq \ldots \geqq u_k$ és $v_1 \geqq v_2 \geqq \ldots \geqq \geqq v_k$; vezessük be a

$$D_1 = \frac{f(v_1) - f(u_1)}{v_1 - u_1},\ D_2 = \frac{f(v_2) - f(u_2)}{v_2 - u_2},\ \ldots,\ D_k = \frac{f(v_k) - f(u_k)}{v_k - u_k} \tag{13}$$

továbbá az

$$U_1 = u_1,\ U_2 = u_1 + u_2,\ \ldots,\ U_k = u_1 + u_2 + \ldots + u_k$$

és

$$V_1 = v_1,\ V_2 = v_1 + v_2,\ \ldots,\ V_k = v_1 + v_2 + \ldots + v_k \tag{14}$$

jelöléseket. Legyen

$$U_1 < V_1,\ U_2 < V_2,\ \ldots,\ U_{k-1} < V_{k-1},\ \text{de } U_k = V_k. \tag{15}$$

Mutassuk meg, hogy ekkor

$$\begin{gathered} U_1(D_1 - D_2) + U_2(D_2 - D_3) + \ldots + U_{k-1}(D_{k-1} - D_k) + \\ + U_k D_k < V_1(D_1 - D_2) + V_2(D_2 - D_3) + \ldots + \\ + V_{k-1}(D_{k-1} - D_k) + V_k D_k \end{gathered} \tag{16}$$

és

$$u_1 D_1 + u_2 D_2 + \ldots + u_k D_k < v_1 D_1 + v_2 D_2 + \ldots + v_k D_k \tag{17}$$