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*Potentially  $H$ -bigraphic sequences.*

We extend the notion of a potentially  $H$ -graphic sequence as follows. Let  $A$  and  $B$  be nonnegative integer sequences. The sequence pair  $S = (A, B)$  is said to be *bigraphic* if there is some bipartite graph  $G = (X \cup Y, E)$  such that  $A$  and  $B$  are the degrees of the vertices in  $X$  and  $Y$ , respectively. If  $S$  is a bigraphic pair, let  $\sigma(S)$  denote the sum of the terms in  $A$ .

Given a bigraphic pair  $S$ , and a fixed bipartite graph  $H$ , we say that  $S$  is *potentially  $H$ -bigraphic* if there is some realization of  $S$  containing  $H$  as a subgraph. We define  $\sigma(H, m, n)$  to be the minimum integer  $k$  such that every bigraphic pair  $S = (A, B)$  with  $|A| = m, |B| = n$  and  $\sigma(S) \geq k$  is potentially  $H$ -bigraphic. In this paper, we determine  $\sigma(K_{s,t}, m, n)$ ,  $\sigma(P_t, m, n)$  and  $\sigma(C_{2t}, m, n)$ . (Received January 23, 2009)