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On some applications of graph theory. III. (In English)

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The results of our first paper are generalized for metric spaces. As an application we prove among others the following theorem: Let $f_k(x)$, $1 \leq k \leq n$, $n > 2^\nu$ be continuous functions in $[0,1]$ satisfying $f_k(0) = 0$, $|f_k(t_1) - f_k(t_2)| \leq |t_1 - t_2|$ for $0 \leq t_1 < t_2 \leq 1$. Then there are at least $n^2/2^\nu - n/2$ pairs $i \neq j$ so that $\max_{0 \leq t \leq 1} |f_i(x) - f_j(x)| \leq \frac{2}{\nu}$. The theorem is best possible. [Our first paper will appear in Discrete Math.; for the second see Studies pure Math., Papers presented to Richard Rado on the Occasion of his sixty fifth Birthday, 89-99 (1971; Zbl 218.52005)].

Classification:
05C90 Appl. of graph theory
05C99 Graph theory