

NOTE

**STILL ANOTHER TRIANGLE-FREE INFINITE-CHROMATIC GRAPH**

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We give a new example of a triangle-free  $\infty$ -chromatic graph: the vertices of  $G$  form a  $\infty \times \infty$  matrix,  $V(G) = [v_{i,j}]$ ,  $i, j = 1, 2, \dots$ . The vertex  $v_{i,j}$  is connected with every vertex of the  $(i+j)$ th column.

$G$  is *triangle-free*: if  $A$  has the smallest column-index among  $\{A, B, C\} \subset V(G)$  and  $AB, AC \in E(G)$ , then  $B, C$  are in the same column so  $BC \notin E(G)$ .

$G$  is *infinite-chromatic*:  $N_i \subseteq \{1, 2, \dots\}$  denotes the set of colours used on the vertices of the  $i$ th column in a good coloring of the vertices of  $G$ . For  $i < j$  the  $i$ th column contains a vertex connected to all vertices of the  $j$ th column therefore  $N_i \neq N_j$  which implies  $|\bigcup_{i=1}^{\infty} N_i| = \infty$ .