Monochromatic Triangle

(a) Seventeen points, no three of which are collinear, are connected by all the possible lines between them (136, in fact). Each line is colored either red, green, or blue. Prove that within the resulting network of lines, there is at least one triangle all of whose sides are the same color.

(b) Let $\lceil a \rceil$ denote the smallest integer greater than or equal to a. Let $\lceil n!e \rceil$ points, no three of which are collinear, be connected by all the possible lines between them. Each line is colored one of n colors. Prove that within the resulting network of lines, there is at least one triangle all of whose sides are the same color.