

- 1.a. Show that the achievement number of K_3 is 5.
- b. Show that the avoidance number of K_3 is larger than 4.
2. Let $h(n)$ be the smallest integer such that any set A of $h(n)$ points in the plane in general position contains n points which are the vertices of an empty n -gon, that is, a polygon whose interior does not contain any points of A . Determine the value of $h(4)$.
3. State and prove a 3-dimensional version of the Happy Ending Theorem.