Ramsey Numbers

Key words:

1. Complete Graph
2. Colouring
3. Ramsey number $R(s,t)$

Solve the following Questions:

1. Prove the following Theorem:

   Theorem 1 *Let K^n be the complete graph with n vertices. Let $R(s,t)$ be the Ramsey number associated with K^n. Show that*

   $$R(s,t) \leq R(s-1,t) + R(s,t-1)$$

2. Show that the Ramsey number $R(3,3) = 6$.
3. Can you show that $R(3,4) = 9$ and $R(3,5) = 14$?

Mathematician in Focus Ramsey