1. Prove that, in the courting algorithm, no man gets rejected by all the women.

2. Let $s_{\text{min}}(n)$ and $s_{\text{max}}(n)$, respectively, denote the smallest and the largest number of solutions of the stable marriage problem involving $n$ women and $n$ men.
   - What are the best upper and lower bounds on $s_{\text{min}}(n)$ that you can find?
   - What are the best upper and lower bounds on $s_{\text{max}}(n)$ that you can find?

3. Let $t_{\text{min}}(n)$ and $t_{\text{max}}(n)$, respectively, denote the smallest and the largest number of iterations of the courting algorithm involving $n$ women and $n$ men.
   - What are the best upper and lower bounds on $t_{\text{min}}(n)$ that you can find?
   - What are the best upper and lower bounds on $t_{\text{max}}(n)$ that you can find?