Homework 6, due Tuesday, June 11. Hand in the starred (*) problems.

*1. Find a primitive root mod 11. Show all its powers in $\mathbb{Z}_{11}^*$. Using your calculation, list all primitive roots in $\mathbb{Z}_{11}^*$.

*2. Prove: The equation $x^{11} \equiv 13 \pmod{175}$ has a unique solution mod 175. (Hint: Consider all powers $a^{11}$ where $(a,175) = 1$. Use Euler’s Theorem.)