Homework #6, Due: 2/28
Math 181 (Discrete Structures), Spring 2024

Problem 1 is worth 5 points, and Problem 2 is worth 5 points, for a total of 10 points. Remember to *show your work* and *explain your answers* on all problems!

1. Prove the following:
   "For any two positive real numbers x and y, if $xy \geq 2$ then $x \geq \sqrt{2}$ or $y \geq \sqrt{2}$."
   Use a proof by contrapositive or a proof by contradiction.

2. Prove the following:
   "For any two sets A and B, if $A \cap B = A \cup B$ then $A = B$."
   Use a proof by contrapositive or a proof by contradiction.