An explorer discovers a village in which every person has a secret. Some villagers are better than others at keeping secrets, and some are better than others at discovering secrets. One of the villagers is a mastermind: someone who knows everyone else's secrets, but whose secret nobody else knows. The explorer wants to identify the mastermind. There are n villagers, and they are willing to answer "yes" or "no" when asked if they know the secret of another villager. However, they will get annoyed if the explorer asks too many questions. Describe a plan the explorer can follow to identify the mastermind with as few questions as possible, and give the number of questions this plan takes.

This problem brought to you by Prof. Lisa Torrey.

Submit your solutions to Prof. Maegan Bos, maegan@stlawu. You may submit either a hard copy or an electronic copy via Sakai. Good Luck!!