Determining Who's Who

If someone always tells the truth we call him a *truth teller*. If someone can either tell the truth or lie we call him a *normal*.

We will often be in a room with some truth tellers and some normals, but not know who is who. We are allowed to ask them questions to try to determine who is who. Note that the normals may plan to make this hard for you.

For the scenarios below determine a way to figure out who is who. Try to do it in a small number of questions.

1. There are 3 people in a room 2 of them are truth tellers and 1 is a normal.

2. There are 4 people in a room 3 of them are truth tellers and 1 is a normal.

3. There are n people in a room $n - 1$ of them are truth tellers and 1 is a normal.

4. There are 3 people in a room 1 of them is a truth tellers and 2 are normal.

5. There are 4 people in a room 2 of them are truth tellers and 2 are normal.

6. There are n people in a room $n - 2$ of them are truth tellers and 2 are normal.

Try to generalize to n people of which $n - k$ are truth tellers and k are normals.