	TRUE	FALSE

1. In collision-checking, every part of the simulated robot is always checked against every part of each obstacle in the arena, to search for possible intersections ☐ ☐

2. Identical sensors (from the same manufacturer etc.) always give identical readings. ☐ ☐

3. In ray-based (simulated) IR sensors, the rays are used only as a computational construct for determining the overall (fuzzy) reading of the sensor. ☐ ☐

1. This is false. Often, one introduces a simplified collision geometry for the simulated robot. Moreover, a grid is typically used, so that collision check need only take into account those obstacles that are (at least in part) located in the same cell(s) as the robot.

2. This is also false. It is not uncommon for supposedly identical sensors to give (slightly) different readings (due to noise, but also due to small, inherent differences between two instances of a sensor.

3. This is true. Unlike laser range finders, IR sensors only give a fuzzy reading, based on reflections from a range of directions. Thus, the rays are combined to form that fuzzy reading; see Eq. (3.13)