Constructing a Hypothesis

Instructions: Identify the independent and dependent variables from the provided problem statements, then create an "if – then" hypothesis statement.

1. **Problem Statement:** An increased amount of car accidents have occurred in the last year because of cell phone use while driving.

   a. **Prediction:** We think that using a new technology device in the car would eliminate the need for using a cell phone while driving and would decrease the amount of accidents.

      - Independent Variable: new technology device

      - Dependent Variable: the amount of cell phone-related accidents

      - Hypothesis Statement: If we create a new technology for use in cars that eliminates the use of cell phones, then the amount of cell phone-related accidents will decrease.

2. **Problem Statement:** The Indiana bat is an endangered species in our community. One of the reasons for this species' endangerment is due to the urban sprawl and removal of their habitat.

   a. **Prediction:** Creating a protected area of ideal habitat for the Indiana bat will increase the number of species in our area.

      - Independent Variable: protected area of ideal habitat

      - Dependent Variable: the number of Indiana bats in the area

      - Hypothesis Statement: If we create a protected area of ideal habitat for the Indiana bat, then the number of species in that area will increase.

3. **Problem Statement:** During the winter when the roads are icy or snowy, large amounts of salt are used to create safer driving conditions. The salt used on our roads is decreasing the quality of the roads and creating runoff that is not good for our environment.

   a. **Prediction:** After conducting research, our team will create a new ice-melting solution that will not harm the environment or the roads.

      - Independent Variable: new ice-melting solution

      - Dependent Variable: road conditions and quality of runoff

      - Hypothesis Statement: If we create an improved ice-melting solution, then we will have better road conditions and less harmful runoff.