Unit 9 - Week 7

Assignment 7

The topic for this assignment is the development of a hypothesis for a science experiment.

1. In a study, the effect of a variable is tested on a group of subjects. The variable is assigned to half of the subjects, while the other half is considered the control group. The experimental group shows a significant increase in the variable's effect compared to the control group.

   - Null hypothesis: There is no significant difference in the variable's effect between the experimental and control groups.
   - Alternative hypothesis: There is a significant difference in the variable's effect between the experimental and control groups.

2. A light source with a wavelength of 650 nm is selected for an experiment. The intensity of light emitted by the source is measured in a controlled environment.

   - Null hypothesis: The light source emits a constant intensity of light.
   - Alternative hypothesis: The light source emits an intensity that varies randomly.

3. In a hypothetical experiment, the intensity of the light source is expected to vary based on the type of material being illuminated. The intensity of light emitted by the source is measured in a controlled environment.

   - Null hypothesis: The intensity of light emitted by the source remains constant for all materials.
   - Alternative hypothesis: The intensity of light emitted by the source varies with different materials.

4. In a study, the effect of a variable is tested on a group of subjects. The variable is assigned to half of the subjects, while the other half is considered the control group. The experimental group shows a significant increase in the variable's effect compared to the control group.

   - Null hypothesis: There is no significant difference in the variable's effect between the experimental and control groups.
   - Alternative hypothesis: There is a significant difference in the variable's effect between the experimental and control groups.

5. A light source with a wavelength of 650 nm is selected for an experiment. The intensity of light emitted by the source is measured in a controlled environment.

   - Null hypothesis: The light source emits a constant intensity of light.
   - Alternative hypothesis: The light source emits an intensity that varies randomly.

6. In a hypothetical experiment, the intensity of the light source is expected to vary based on the type of material being illuminated. The intensity of light emitted by the source is measured in a controlled environment.

   - Null hypothesis: The intensity of light emitted by the source remains constant for all materials.
   - Alternative hypothesis: The intensity of light emitted by the source varies with different materials.

7. In a study, the effect of a variable is tested on a group of subjects. The variable is assigned to half of the subjects, while the other half is considered the control group. The experimental group shows a significant increase in the variable's effect compared to the control group.

   - Null hypothesis: There is no significant difference in the variable's effect between the experimental and control groups.
   - Alternative hypothesis: There is a significant difference in the variable's effect between the experimental and control groups.

8. A light source with a wavelength of 650 nm is selected for an experiment. The intensity of light emitted by the source is measured in a controlled environment.

   - Null hypothesis: The light source emits a constant intensity of light.
   - Alternative hypothesis: The light source emits an intensity that varies randomly.

9. In a hypothetical experiment, the intensity of the light source is expected to vary based on the type of material being illuminated. The intensity of light emitted by the source is measured in a controlled environment.

   - Null hypothesis: The intensity of light emitted by the source remains constant for all materials.
   - Alternative hypothesis: The intensity of light emitted by the source varies with different materials.