

Name: \_\_\_\_\_

### Experimental/Scientific Method Review

For each of the following examples, write a **hypothesis** (e.g., "If...then..."), identify the **independent & dependent** variables, a simple **operational definition** of how you might measure the dependent variable, & identify the **experimental & control** groups.

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1. Two groups of rats are run through a maze. The time that it takes for each rat to reach the goal box is recorded. One group of rats is deprived of food for 24 hours before running the maze. The other group is fed one hour before the maze trials. All other conditions for the two groups are the same. It is found that the rats which were deprived of food for 24 hours before each trial ran the maze at a faster rate than those fed one hour before the maze trials.

Hypothesis: \_\_\_\_\_

\_\_\_\_\_

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Independent Variable(s):

\_\_\_\_\_

Dependent Variable(s):

\_\_\_\_\_

Operational Definition(s):

\_\_\_\_\_

\_\_\_\_\_

Experimental Group:

\_\_\_\_\_

Control Group:

\_\_\_\_\_

2. A Psychology teacher allowed her third hour class to eat snacks while taking an exam. Her fourth hour class was not allowed to eat snacks while taking the same exam. She found that the class which snacked during the test scored better than the class that was not allowed to eat. Prior to this, both classes had comparable test score averages.

Hypothesis: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Independent Variable(s):

\_\_\_\_\_

Dependent Variable(s):

\_\_\_\_\_

Operational Definition(s):

Four groups of rats were being conditioned to elicit an escape-avoidance response. Groups 1, 2, & 3 were given 10, 15, & 20 volts of shock respectively. Group 4 was given no shock. All other conditions were the same for each group. The time it took for each rat to learn the escape avoidance response was recorded. It was found that the more shock the rats received, the less time it took for them to learn the escape-avoidance response.

Hypothesis: \_\_\_\_\_

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Independent Variable(s): \_\_\_\_\_

Dependent Variable(s): \_\_\_\_\_

Operational Definition(s): \_\_\_\_\_

opposed to a low-contrast image. She tests infants using picture books with images which vary as to complexity (e.g. a complex sailboat silhouette vs. a simple square silhouette) & contrast (black & white images vs. shades of gray), exposing all of the subject infants to all of the images being used. She discovered that in general the infants spent the greatest amount of time looking at images which were both more complex & of high contrast, while the least was on images of low complexity & low contrast.

Hypothesis: \_\_\_\_\_

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Independent Variable(s): \_\_\_\_\_

Dependent Variable(s): \_\_\_\_\_

Operational Definition(s): \_\_\_\_\_

reducing their anxiety levels while preparing for & taking those tests. She finds that students who learned her mnemonic techniques did in fact report lower levels of anxiety, & demonstrated somewhat improved performance on their tests.

Hypothesis: \_\_\_\_\_

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Independent Variable(s): \_\_\_\_\_

Dependent Variable(s): \_\_\_\_\_

Operational Definition(s): \_\_\_\_\_