Name \_\_\_\_\_\_\_\_\_\_

Biology: 1st Quarter Hypothesis Assessment

Please read the following and answer questions #1-4.

A researcher has hypothesized that the chemical tributylin (an anti-fouling agent in boat paint) leaks out of the paint over time into the water and causes serious reproductive defects in developing sea water/marine snails. Design an experiment to test the role tributylin has on snails in a salt water aquarium.

1. A good hypothesis to make is:
   1. If chemical tributylin is in salt water with snails, then snails will have more serious reproductive defects.
   2. If chemical tributylin is in the fresh water, then marine starfish will have problems.
   3. If chemical tributylin does not leak out, then the snails will have more reproductive defects.
   4. If chemical tributylin is in the air, then the snails will have more serious reproductive defects.
   5. None of the above
2. In order to carry out the experiment, I will be collecting data
   1. on the temperature of the salt water to see if the snail prefer warm or cold water.
   2. on how many snails died.
   3. on the defects in the serious reproductive system of the snails.
   4. on the a how many boats use tributylin paint.
   5. None of the above
3. The **independent variable** in this experiment is
   1. the number of days the experiment is running
   2. the different amounts of tributylin in 100 ml of water for each experiment.
   3. the number of snails that are put into each beaker during the experiment
   4. the number of snails that develop serious reproductive system defects
   5. None of these are the independent variable.
4. The **dependent variable** in my experiment is:
   1. the number of days the experiment is running.
   2. the different amounts of tributylin in 100 ml of water for each experiment.
   3. the number of snails that are put into each beaker during the experiment.
   4. the number of snails that develop serious reproductive system defects.
   5. None of these are the dependent variable.

Please read the following and answer questions #5-8.

Oscar has heard from some of his teammates that taking creatine as a protein supplement during football training will increase his muscle mass. He decides to test this hypothesis through an experimental study.

1. Which statement is the best hypothesis?
   1. If muscle mass increases during training, then creatine is the reason.
   2. If creatine is taken during training, then there will be an increase in muscle mass.
   3. If creatine is taken during training, then football performance will increase.
   4. If creatine is not taken during training, then athletic performance will decrease.
   5. None of the above
2. What is the **independent** **variable**?
   1. Change in football performance
   2. Change in muscle mass
   3. Change in the amount of creatine
   4. Change in the amount of time
   5. None of the above
3. What is the **dependent** **variable**?
   1. improved football performance
   2. increased muscle mass
   3. amount of creatine
   4. amount of time
   5. None of the above
4. Which set of data is best?
   1. Measure the body weight before, during and after training to calculate muscle mass
   2. Measure the amount training
   3. Measure the amount of creatine protein taken during training
   4. Measure the amount of time for training
   5. None of the above