**Experimental Design – ACT Style** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Beth works in a flower shop after school. She notices hydrangeas (a type of flower) in container 1 have pink blossoms, and hydrangeas in container 2 have blue blossoms. She makes certain they all receive the same amount of water and light. Her boss tells her they were all grown from the same seeds. Beth tests the soil and finds the soil in container 1 has a pH of 6.0 and the soil in container 2 has a pH of 5.0.

1.\_\_\_\_\_ Beth most likely conducted her experiment to answer which question about hydrangeas?

1. How does the pH of the soil affect the color of hydrangea blossoms?
2. What role do genetic factors play in the hydrangea color?
3. Do the varying degrees of light affect hydrangea color?
4. What type of soil will produce a hydrangea with both pink and blue blossoms?

2.\_\_\_\_\_ A scientist found the results of an experiment did not support her hypothesis. If she follows proper scientific procedures, what should she do next?

1. Discard those results and repeat the experiment.
2. Accept the hypothesis and exclude data that does not fit it.
3. Reject the hypothesis and assume it is not correct.
4. Repeat the experiment and compare the new data to data from first experiment.

3.\_\_\_\_\_\_ Emmanuel wants to determine if temperature affects the rate at which mold grows on bread. He puts one piece of bread inside a petri dish, closes the lid, and places the petri dish in the refrigerator. To determine whether temperature affects the rate of mold growth, he should place another piece of bread into a petri dish:

1. leave the dish uncovered, and place the dish in the refrigerator.
2. cover the dish, and place in refrigerator.
3. leave the dish uncovered, and place the dish in a dark, room temperature cabinet.
4. cover the dish, and place the dish in a dark, room temperature cabinet.