Name _____ Date _____ Class _____

LABORATORY SKILLS CHECKUP 2

Analyzing Elements of a Scientific Method

Read the following statements and then answer the questions.

1. You and your friend are walking along a beach in Maine on January 15, at 8:00 AM.
2. You notice a thermometer on a nearby building that reads −1°C.
3. You also notice that there is snow on the roof of the building and icicles hanging from the roof.
4. You further notice a pool of sea water in the sand near the ocean.
5. Your friend looks at the icicles and the pool and says, "How come the water on the roof is frozen and the sea water is not?"
6. You answer, "I think that the salt in the sea water keeps it from freezing at −1°C."
7. You go on to say, "And I think under the same conditions, the same thing will happen tomorrow."
8. Your friend asks, "How can you be sure?" You answer, "I'm going to get some fresh water and some salt water and expose them to a temperature of −1°C and see what happens."

◆ Questions

A. In which statement is a **prediction** made? _____

B. Which statement states a **problem?** _____

C. In which statement is an **experiment** described? _____

D. Which statement contains a **hypothesis?** _____

E. Which statements contain **data?** _____

F. Which statements describe **observations?** _____

PART B – SCIENTIFIC METHOD

READ THIS STORY AND ANSWER THE QUESTIONS:

Joe baked a cake for his mother's birthday. When he removed the cake from the oven, Joe noticed that the cake had not risen. Joe guessed that the baking powder he had used was too old. He designed the following experiment to test his idea.

Joe prepared two cakes – one using the same ingredients as his first cake and one using fresh baking powder. After preheating oven to 350°F, he placed both cakes in the oven for 30 minutes. After 30 minutes, he removed both cakes and noticed that neither one had risen. He decided that the baking powder wasn't the cause of his problem.

1. Underline Joe's hypothesis.
2. Circle Joe's conclusion.
3. Box-in Joe's observation(s).

4. What was the independent variable in Joe's experiment? _____

5. What was the dependent variable in Joe's experiment? _____

6. What was the control in Joe's experiment? _____

7. What were the constants in Joe's experiment (assuming he did it correctly)?

8. Based on his conclusion, what should Joe do next?