**Spongebob Scientific Method Name_____ Period_____**

**SpongeBob and his Bikini Bottom pals have been busy doing a little research. Read the description for each experiment and answer the questions.**

**SpongeBob Clean Pants**

SpongeBob noticed that his favorite pants were not as clean as they used to be. His friend Sandy told him that he should try using Clean-O detergent, a new laundry soap she found at Sail-Mart. SpongeBob made sure to wash one pair of pants in water and his current laundry soap and another pair in water with the Clean-O detergent. After washing both pairs of pants a total of three times, the pants washed in the Clean-O detergent did not appear to be any cleaner than the pants washed in his current laundry soap.

1. What was the problem SpongeBob wanted to investigate?

_____

2. What is the independent variable?

_____

3. What is the dependent variable?

_____

4. What are the results of Sponge Bob's investigation?

_____

**Squidward's Symphony**

Squidward loves playing his clarinet and believes it attracts more jellyfish than any other instrument he has played. In order to test his hypothesis, Squidward played a song on his clarinet for a total of 5 minutes and counted the number of jellyfish he saw in his front yard. He played the song a total of 3 times on his clarinet and repeated the experiment using a flute and a guitar. He also recorded the number of jellyfish he observed in his yard when he was not playing an instrument. The results are shown in the chart.

**Number of Jellyfish/Instrument**

| Trial | No Music | Clarinet | Flute | Guitar |
|---|---|---|---|---|
| 1 | 5 | 15 | 5 | 12 |
| 2 | 3 | 10 | 8 | 18 |
| 3 | 2 | 12 | 9 | 7 |

5. What is the independent variable?

_____

6. What is the dependent variable?

_____

7. What are the results of Squidward's investigation?

_____

8. Are the results reliable?

_____

9. Defend your answer?

_____

**Super Bubbles**

Patrick and SpongeBob love to blow bubbles! Patrick found some Super Bubble Soap at Sail-Mart. The ads claim that Super Bubble Soap will produce bubbles that are twice as big as bubbles made with regular bubble soap. Patrick and SpongeBob made up two samples of bubble solution. One sample was made with 5 oz. of Super Bubble Soap and 5 oz. of water, while the other was made with the same amount of water and 5 oz. of regular bubble soap. Patrick and SpongeBob used their favorite bubble wands to blow 10 different bubbles and did their best to measure the diameter of each one. The results are shown in the chart

10. What did the Super Bubble ads claim?

_____

11. What is the independent variable?

_____

12. What is the dependent variable?

_____

Look at the results in the chart.

**Bubbles (Diameter in Centimeters – cm)**

| Trial | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Super Bubble | 15 | 10 | 12 | 18 | 22 | 13 | 16 | 18 | 15 | 12 |
| Regular Bubble | 10 | 5 | 16 | 14 | 11 | 12 | 11 | 15 | 15 | 6 |

Calculate the average diameter for each bubble solution.

**<u>REMEMBER: an average is the MEAN, add up all the numbers and divide by the number of trials!</u>**

13. Super Bubble = ____ cm

14. Regular Soap = ____ cm

15. What are the results of Patrick and SpongeBob's investigation?

_____

16. Are the results reliable?

_____

17. Defend your answer?

_____