FPS – Chapter 1 Unit 1 Review

Name_____ Period_____

1. List several important safety rules.

2. What is an observation? Give several examples.

3. List the steps of the scientific method. Explain each.

4. What makes a good hypothesis? Give an example of one from the Pinky Lab.

5. Define independent variable, dependent variable, control group, and controlled variables.

6. Why is standardized measurement important?

7. What is the difference between precision and accuracy?

8. List the types of graphs and describe what data types best fit each.

9. What is density?

10. What is the placebo effect? Give an example.

Problem solving

Convert the following metric values. SHOW YOUR WORK.

11. 500 cm = _____ m

12. 10 km = _____ m

13. 800 cm = _____ m

14. 3000 m = _____ km

15. 9 cm = _____ mm

16. 6 cm = _____ mm

17. 8 km = _____ m

18. 4000 m = _____ km

19. 7000 m = _____ km

20. 1000 cm = _____ m

21. 80 mm = _____ cm

22. 5000 m = _____ km

23. 1 m = _____ cm

24. 10 cm = _____ mm

25. 2 cm = _____ mm

26. 2000 m = _____ km

27. 300 cm = _____ m

28. 200 cm = _____ m

29. 900 cm = _____ m

30. 30 mm = _____ cm

Write the number(s) given in each problem using scientific notation.

31. The human eye blinks an average of 4,200,000 times a year.

32. A computer processes a certain command in 15 nanoseconds. (A nanosecond is one billionth of a second.) In decimal form, this number is 0. 000 000 015 seconds.

33. There are 97,000 km in blood vessels in the human body.

34. The highest temperature produced in a laboratory was 920,000,000 F (511,000,000 C) at the Tokamak Fusion Test Reactor in Princeton, NJ, USA.

_____ F _____ C

35. The mass of a proton is 0.000 000 000 000 000 000 000 001 673 grams.

36. The mass of the sun is approximately 1,989,000,000,000,000,000,000,000,000,000,000 grams.

37. The cosmos contains approximately 50,000,000,000 galaxies.

38. A plant cell is approximately 0.00001276 meters wide.

Write the number(s) given scientific notation in standard form.

39. The age of earth is approximately 4.5×10^9 years. yr

40. The mass of a tiny block is is 1.66×10^{-8} kg.

Using the formula for density, solve the following problems.

41. A flask that weighs 345.8 g is filled with 225 mL of carbon tetrachloride. The mass of the flask and carbon tetrachloride is found to be 703.55 g. From this information, calculate the density of carbon tetrachloride.

42. Calculate the density of sulfuric acid if 35.4 mL of the acid weighs 65.14 g.

43. Find the mass of 250.0 mL of benzene. The density of benzene is 0.8786 g/mL.

44. A block of lead has dimensions of 4.50 cm by 5.20 cm by 6.00 cm. The block weighs 1591 g. From this information, calculate the density of lead.

45. 28.5 g of iron shot is added to a graduated cylinder containing 45.5 mL of water. The water level rises to the 49.1 mL mark, From this information, calculate the density of iron.

46. What volume of silver metal will weigh exactly 2500.0 g. The density of silver is 10.5 g/cm^3.

47. My Uncle Lester owns a fruit stand and wants to keep track of how many of each kind of fruit that he sells on average per day.

Papaya 15, Mangos 20, Star Fruit 10, Oranges 40, Apples 50
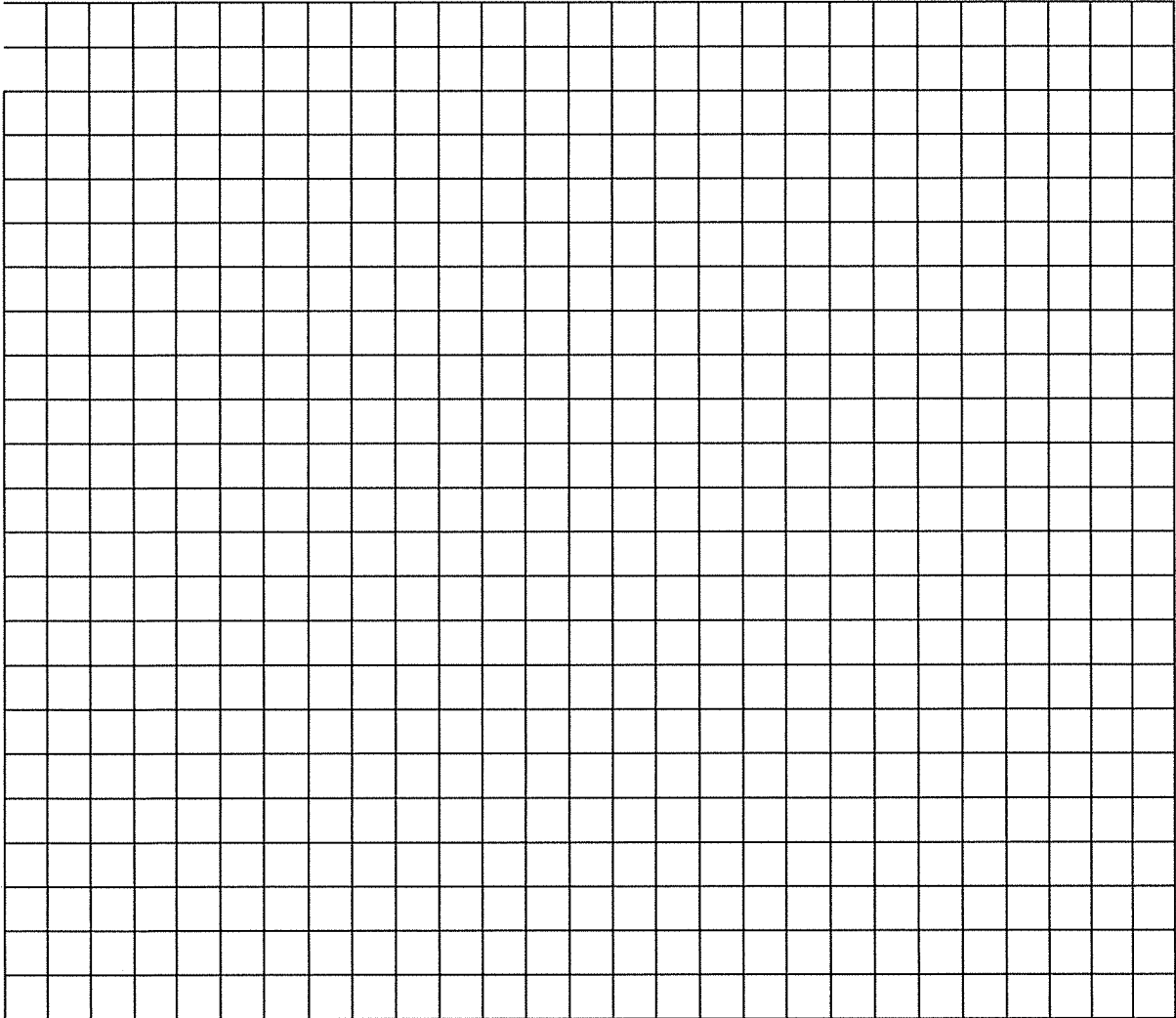
48. The data table below shows how the volume of a gas changes as the temperature of the gas changes.

Temperature (Celcius)	Volume (Millimeters)
100	310
80	300
60	280
50	270
40	250
30	240
20	230
10	220
0	200
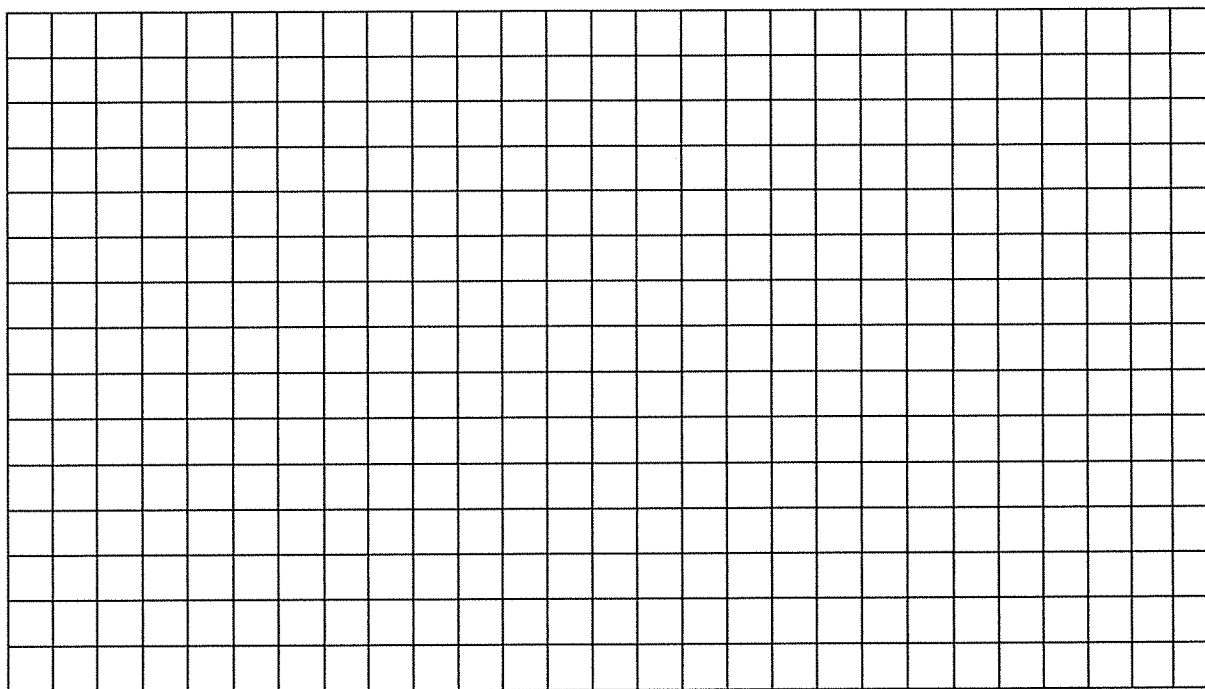
49. Systeme Internationale (SI Units)

Quantity	Name	Symbol
Length		
	Kilogram	
Time		
Electric current		
Temperature		
	Mole	
Luminous intensity		

50. Derived Units

Quantity	Name	Symbol
Area (l x w)		
Volume (l x w x h)		
Speed		
Acceleration		
Density		
Volume of a liquid		