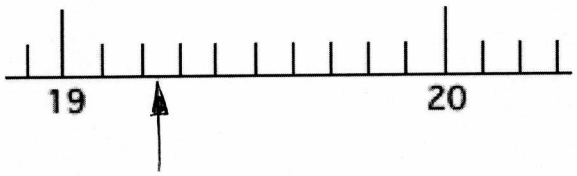
**Quiz 1**
Chem 1A, Fall 2019
Fossum

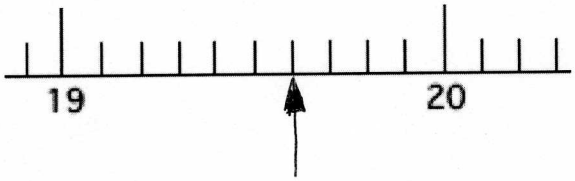
Name:_____

**Always show your work, include units, and check significant figures.**

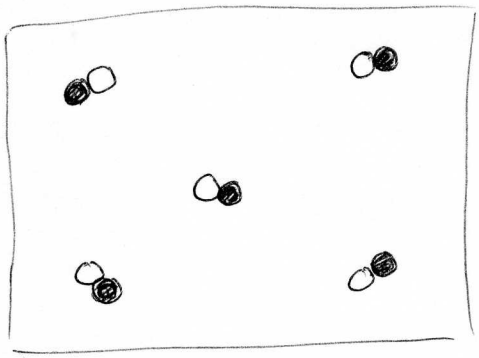
1. (1 point) What are two precautions to follow when using laboratory thermometers?

2. (2 points) Shown here is a close-up of part of a ruler. The units are centimeters. If you were measuring with this ruler and your object came to the length indicated by the arrow, what would be the length of the object <u>to the nearest 0.01 cm</u>? (You must interpolate!)




3. (2 points) Given the following molecular picture, is this a pure substance? Clearly explain why or why not.



4. (2 points) For each of the following measurements, state the <u>number of significant figures</u>, the <u>uncertainty</u> implied (± what?) and the <u>range</u> of possible values.

a. 650 mL

b. 75.00 g

5. (2 points) Perform the following calculations and round off the results to the correct number of significant figures. (There will be no credit for the correct calculation if the number of significant figures is incorrect.)

a. $154.70 - 86.534 =$

b. $0.05784 \times (9.7054 + 4.8) =$

6. (2 points) Explain the similarities and differences between heterogeneous mixtures and homogeneous mixtures. Give an example of each.

7. (5 points) How many quarts are in 2.0 $m^3$?
1 L = 1.0567 qt, and remember that 1 $cm^3$ = 1 mL.

b. Is your answer for part a larger or smaller than the original number? Does this make sense? Explain why or why not.

8. (4 points) Lead has a density of 11.3 $g/cm^3$. What is the volume, in liters, of 5.00 pounds of lead? (1 lb = 453.6 g)