Name_____ H Chem, Period _____

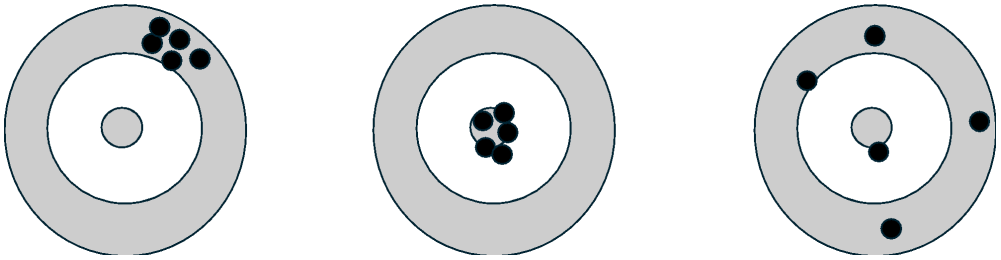
Accuracy and Precision

Definitions:
Accuracy –

Precision –

Precision versus Accuracy:

Look at each target and decide whether the "hits" are accurate, precise, both accurate and precise, or neither accurate nor precise:



_____ _____ _____

Precision Problems:

A group of students worked in separate teams to measure the length of an object. The data is below:

Team 1	Team 2	Team 3	Team 4	Team 5	Team 6	Team 7
2.65 cm	2.75 cm	2.80 cm	2.77 cm	2.60 cm	2.65 cm	2.68 cm

1. What is the average length? Show the formula first with no numbers, followed by the work with values from the data.

2. Calculate the range or spread of a set of data: Subtract the highest value from the lowest value, but make it an absolute value. Show formula, followed by work.

3. Calculate the approximate ± range from the average. Divide the range by 2. Show formula, followed by work.

4. The precision of the measurement can be shown as average ± range.

   The precision of the measurement was _____±_____ cm.

A second group of students obtained the following data:

Team 8	Team 9	Team 10	Team 11	Team 12	Team 13	Team 14
2.55 cm	2.70 cm	2.85 cm	2.75 cm	2.65 cm	2.62 cm	2.78 cm

5. The average length for group 2:

6. The precision of the measurement was _____±_____ cm.

7. In comparing groups, which group was more precise? **Justify your answer.**