ACCURACY & PRECISION

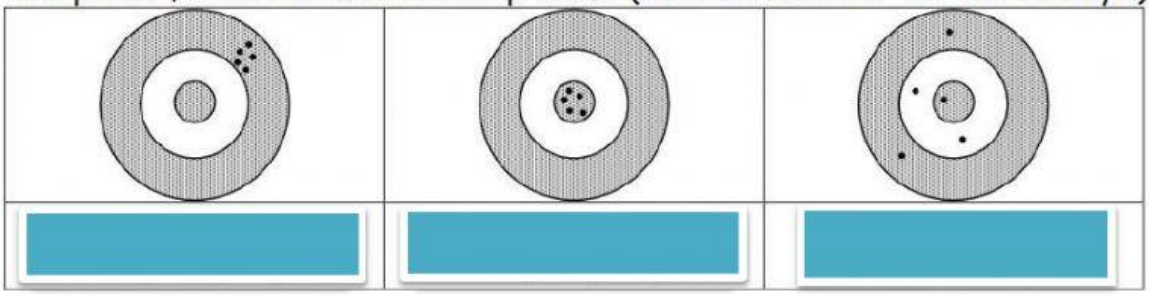
Definitions:

Accuracy - how close a measurement is to _____

Precision - how close a measurement is to _____

Precision versus Accuracy:

Look at each target and decide whether the "hits" are accurate, precise, both accurate and precise, or neither accurate nor precise: (Note: An accurate "hit" is a bulls eye!)



Precision Problems:

A group of students worked in separate teams to measure the length of an object. Here are their data:

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

- The average length is _____ cm.
  This is the mean or average.
- Subtract the highest value from the lowest value: _____ cm.
  This is the range or spread.
- Divide this number by 2: _____ cm.
  This is the approximate ± range from the average.
- The precision of the measurement can be shown as average ± range.
  The precision of the measurement was _____ ± _____ cm.

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A second group of students obtained the following data:

Team 8	Team 9	Team 10	Team 11	Team 12	Team 13	Team 14
2.60 cm	2.70 cm	2.80 cm	2.75 cm	2.65 cm	2.62 cm	2.78 cm

- The average length is _____ cm.
  This is the mean or average.

- Subtract the highest value from the lowest value: _____ cm.
  This is the range or spread.

- Divide this number by 2: _____ cm.
  This is the approximate ± range from the average.

- The precision of the measurement can be shown as average ± range.
  The precision of the measurement was _____ ± _____ cm.

In comparing groups, the first or the second, which group was more precise or was the precision the same? **Justify your answer**.