

ACCURACY & PRECISION

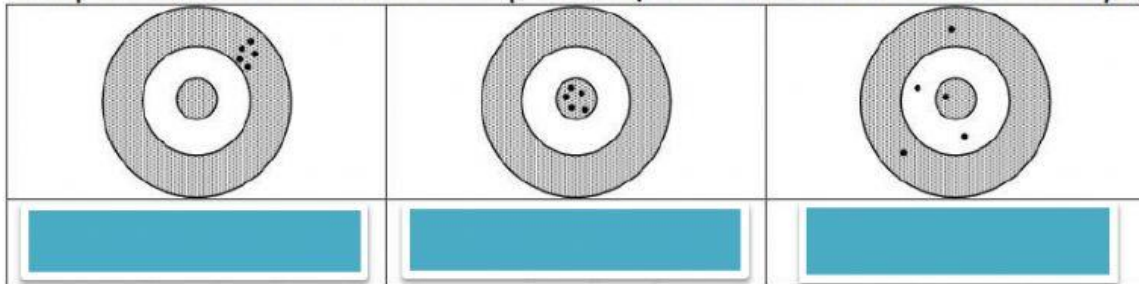
Definitions:

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 \pm range from the average.
- The precision of the measurement can be shown as average \pm range.
The precision of the measurement was \pm cm.

ACCURACY & PRECISION

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 \pm range from the average.
- The precision of the measurement can be shown as average \pm range.
The precision of the measurement was \pm cm.

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