

# UNIT 6: STATISTICS

DEF

**STATISTICAL QUESTION:** A QUESTION THAT CAN HAVE A VARIETY OF ANSWERS.

**EXAMPLES:**

- HOW MANY BOOKS DID MY FRIENDS READ THIS SUMMER?

- HOW TALL ARE MY CLASSMATES?

**NON-EXAMPLES:**

- HOW MANY STATES ARE IN THE US

- HOW OLD AM I?

- HOW MANY STUDENTS ARE IN MY 2ND PERIOD?

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**OUTLIER:** A VALUE THAT IS FAR AWAY (STANDS OUT) FROM OTHER VALUES IN A DATA SET.

2, 3, 5, 3, 2, 100 ← OUTLIER

TYPES OF DATA SETS

REPRESENTATIVE - ALL POPULATION (ALL SUBSETS)

RANDOM - RANDOM SELECTION

BIASED - LEANS ONE DIRECTION, FAVORS ONE GROUP

# ANALYZING DATA

## CENTER SPREAD SHAPE

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MEASURE OF CENTER: A SINGLE NUMBER DESCRIBING HOW A DATA SET LOOKS IN THE MIDDLE

- 1) MEAN - AVERAGE ☹️
- 2) MEDIAN - MIDDLE # WHEN DATA IS IN ORDER
- 3) MODE - # OR #'S THAT APPEAR MOST

EXAMPLE: 9, 2, 3, 2, 4, 6, 7, 7

2, 2, 3, 4, 6, 7, 7, 9

1) MEAN - ADD ALL #'S + DIVIDE BY # OF #'S

$$\frac{2+2+3+4+6+7+7+9}{8} = \frac{40}{8} = \boxed{5}$$

2) MEDIAN - MIDDLE

$$2, 2, 3, \boxed{4}, \boxed{6}, 7, 7, 9 \quad \frac{4+6}{2} = \frac{10}{2} = \boxed{5}$$

3) MODE -  $\boxed{2, 2}, 3, 4, 6, \boxed{7, 7}, 9 \quad \boxed{2 + 7}$



YOU TRY:

1) ~~3, 5, 13, 6, 1, 2, 3, 2, 1~~      1, 1, 2, 2, 3, 3, 5, 6, 13

MEAN  
$$\frac{1+1+2+2+3+3+5+6+13}{9}$$
$$\frac{36}{9} = \boxed{4}$$

MEDIAN  
1, 1, 2, 2, 3, 3, 5, 6, 13  
$$\boxed{3}$$

MODE  
$$\boxed{1, 2, 3}$$

2) 100, 111, 122, 133, 144, 155, 166

MEAN  
$$\frac{100+111+122+133+144+155+166}{7}$$
$$\frac{931}{7} = \boxed{133}$$

MEDIAN  
$$\boxed{133}$$

MODE  
$$\boxed{\text{NONE}}$$

3) ~~84, 140, 105, 119, 105, 84, 105~~

84, 84, 105, 105, 105, 119, 140

MEAN  
$$\frac{84+84+105+105+105+119+140}{7}$$
$$\frac{742}{7} = \boxed{106}$$

MEDIAN  
$$\boxed{105}$$

MODE  
$$\boxed{105}$$