12-2 Skills Practice
Statistics and Parameters

Identify the sample and the population for each situation. Then describe the sample statistic and the population parameter.

1. A restaurant randomly selects 10 patrons on Saturday night. The mean amount spent on beverages is then calculated for the sample.
   - **Sample:** 10 patrons
   - **Sample Statistic:** mean of 10 patrons

   - **Population:** Entire restaurant
   - **Population Parameter:** mean of entire restaurant

2. A veterinarian randomly selects 3 kittens from a litter. The mean weight of the 3 kittens is calculated.
   - **Sample:** 3 kittens
   - **Sample Statistic:** mean of 3 kittens

   - **Population:** The litter
   - **Population Parameter:** mean of the litter

3. A produce clerk randomly selects 20 bags of apples from a shipment and counts the total number of apples in each bag. The mean number of apples is calculated for the sample.
   - **Sample:** Total # of apples in the 20 bags
   - **Sample Statistic:** mean of ←

   - **Population:** The entire shipment
   - **Population Parameter:** mean of ←

Find and interpret the mean absolute deviation.

4. A researcher counts the number of river otters observed on each acre of land in a state park: $\{0, 10, 14, 6, 0, 8, 4\}$. $\bar{x} = 6$

   $\text{abs}\left(L_1 - \bar{x}\right)$

   MAD $\bar{x} = 4$

5. A fisherman records the weight of each black bass he catches during a fishing trip: $\{12, 7, 8, 13, 6, 14\}$.

   $\bar{x} = 10$

   MAD $= 3$

Find and interpret the standard deviation of each set of data.

6. {10, 9, 11, 6, 9}

$\bar{x} = 9$

$\sigma = 1.67$

Data is close

7. {6, 8, 2, 3, 2, 9}

$\bar{x} = 5$

$\sigma = 2.83$

Data is spread out

8. {23, 18, 28, 36, 15}

$\bar{x} = 24$

$\sigma = 7.5$

Data is spread out

9. {44, 35, 40, 37, 43, 38, 40}

$\bar{x} = 39.57$

$\sigma = 2.97$

Data is close

10. A city councilor wants to know how much revenue the city would earn by installing parking meters on Main Street. He counts the number of cars parked on Main Street each weekday: {64, 79, 81, 53, 63}. Find and interpret the standard deviation.

$\bar{x} = 68$

$\sigma = 10.55$

Because the std dev. is small, the data is close, so the mean of 68 is a good representation of cars parked.