

Show all work. Your answers must be fully justified.

1. Classify each of the following variables as discrete or continuous.

The volume of water in a lake                      Discrete       Continuous

The number of fish in a lake                       Discrete      Continuous

2. Given the following data set:

4, 5, 9

Find:

- (a) the mean

$$\frac{4 + 5 + 9}{3} = 6$$

- (b) the variance.

$$\frac{(4 - 6)^2 + (5 - 6)^2 + (9 - 6)^2}{3 - 1} = \frac{4 + 1 + 9}{2} = 7$$

3. Given the following data set:

7, 10, 11, 12, 13, 13, 15, 17, 21, 22, 24, 27, 30, 31, 34, 34, 34, 36

- (a) Find the 5-number summary for the data set.

$$Q1 : \frac{n+1}{4} = \frac{19}{4} = 4.75 \quad \uparrow 5$$

$$Q1 = 13$$

$$Q2 = \frac{21 + 22}{2} = 21.5$$

$$Q3 : \frac{3(n+1)}{4} = \frac{57}{4} = 14.25 \quad \downarrow 14$$

$$Q3 = 31$$

The 5-number summary is: 7, 13, 21.5, 31, 36

- (b) Construct the boxplot for the data set.