Math 123-01
Summer 2025
Dr. Lily Yen

Quiz 6

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Problem 1: Below is a list of ages for a sample of construction workers on Burnaby's Cameron Recreation job site.

29, 19, 33, 24, 37, 25, 18, 27, 25, 42, 43, 56, 51

a. Make a stem-and-leaf plot of the given data.

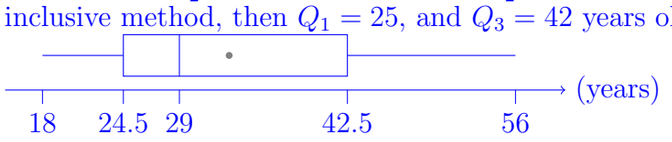
b. Find the mode.

c. Find the range.

d. Draw a boxplot for the data, clearly labelling all three quartiles.

1	8 9
2	4 5 5 7 9
3	3 7
4	2 3
5	5 6

a. $n = 13$ workers; b. the median is 29 years; c. the mode is 25 years; d. 18–56 years, and e. $Q_1 = \frac{24+25}{2} = 24.5$ years; $Q_3 = \frac{42+43}{2} = 42.5$ years excluding the median. If using inclusive method, then $Q_1 = 25$, and $Q_3 = 42$ years old.



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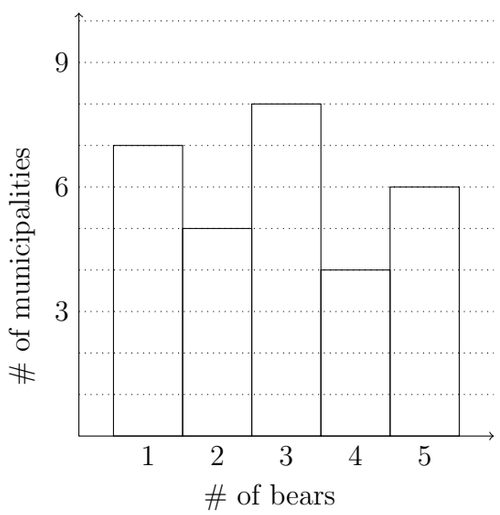
Problem 2: The histogram shown is a summary of a survey of the number of bears (on the horizontal axis) a sample of our provincial municipalities have. Answer the following questions. Remember to round correctly and include units when applicable.



a. Find the number (n) of municipalities surveyed.

b. Find the average number of bears per municipality in the sample.

c. Find the standard deviation of the sample data.

a. The number of municipalities surveyed is $n = 7 + 5 + 8 + 4 + 6 = 30$ municipalities.

b. The average number of bears is
$(7 \times 1 + 5 \times 2 + 8 \times 3 + 4 \times 4 + 6 \times 5)/30 = 87/30 \approx 2.9$ bears per municipality.

c. The variance is

$$\frac{7 \times (1-2.9)^2 + 5 \times (2-2.9)^2 + 8 \times (3-2.9)^2 + 4 \times (4-2.9)^2 + 6 \times (5-2.9)^2}{30-1} \approx 2.093,$$

so the standard deviation is $\sqrt{2.093} \approx 1.447$.

Score: /4

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