

Name: \_\_\_\_\_

Show work needed to justify your answer.

Date: \_\_\_\_\_

HW: # 26b: Math IBSL - Standard 25 - Measures of Dispersion (day 3)

5 points

3 A real estate agent recorded the number of rooms in the houses that she was selling.

2 4 12 40 60 12 14 18

Rooms	1	2	3	4	5	6	7	18
Houses	2	2	4	10	12	2	2	1

- Find the mean and standard deviation.
- Remove the house with 18 rooms and find the new mean and standard deviation.

(a) mean:  

$$\frac{2+4+12+40+\dots+18}{35}$$

$$\sigma = \sqrt{\frac{\sum_{i=1}^{35} (x_i - \mu)^2}{n}} = 4.63$$

$$\sigma = 2.67$$

5 Han's car dealership has 25 cars for sale. The prices are in thousands of Yen.

Price (x, Yen 1000s)	Cars
$100 < x \leq 200$	3
$200 < x \leq 300$	6
$300 < x \leq 400$	11
$400 < x \leq 500$	5

mean  

$$\frac{450 + 1500 + 3850 + 2250}{25}$$

$$322$$

$$\sigma = 91.7$$

Find the mean price of a car and the standard deviation.

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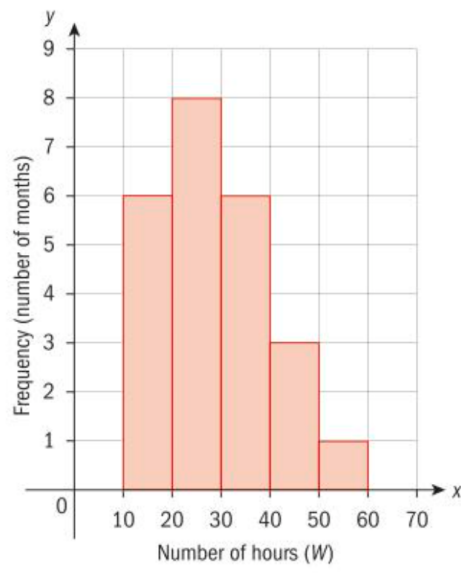
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6 Sofia's security company recorded data for the total amount of overtime, in hours, her employees worked each month. She presented her data in this histogram.



- a For how many months did Sofia collect data? **24**
- b What was the modal number of hours of overtime? **20-30**
- c Estimate the mean number of hours of overtime.
- d Estimate the standard deviation.

(c) 
$$\frac{6(15) + 8(25) + 6(35) + 3(45) + 1(55)}{24}$$
  
**28.75**

(d) **11.1 =  $\sigma$**