

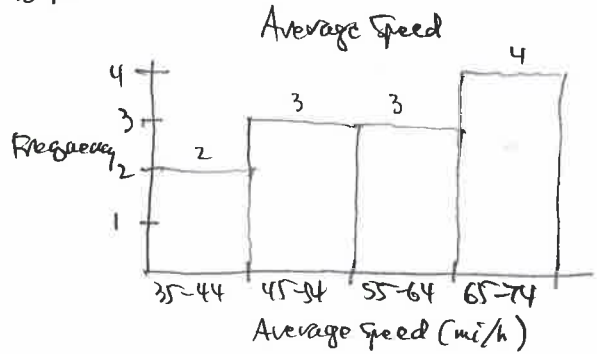
Lesson 12-2

Use the data to make a cumulative frequency table and a histogram.

1. average speeds (mi/h): ~~67~~ 51 52 74 ~~47~~ ~~62~~ 35 65 40 88 ~~62~~ 70
35 40 47 51 52 58 62 62 65 67 70 74

4 classes $\frac{74-35}{3} = \frac{39}{3} = 13 \rightarrow 10$

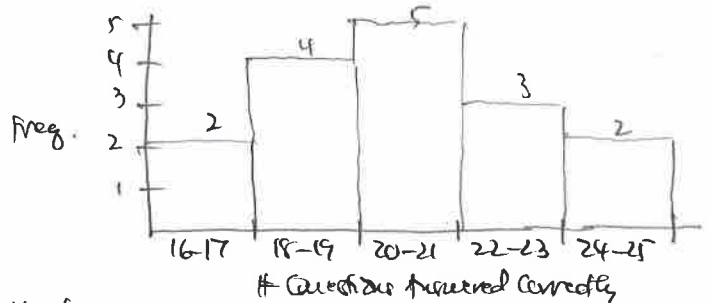
Class	Frequency	Cumulative Frequency
35-44	2	2
45-54	3	5
55-64	3	8
65-74	4	12



2. questions answered correctly: ~~16~~ ~~17~~ ~~22~~ 18 21 18 20 19 25 24 20 17 22 23 20 21
16 17 18 19 19 20 20 20 21 21 22 22 23 24 25

5 classes $\frac{25-16}{5} = 1.8 \rightarrow 2$

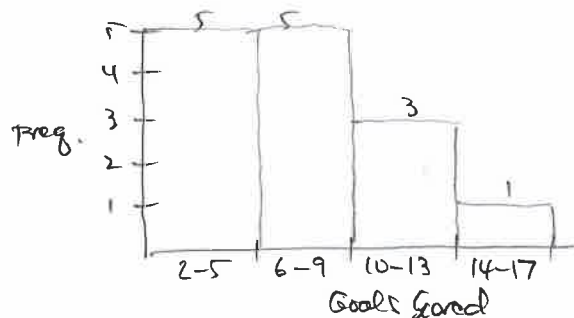
Class	Freq.	Cum. Freq.
16-17	2	2
18-19	4	6
20-21	5	11
22-23	3	14
24-25	2	16



3. goals scored: ~~4~~ ~~9~~ ~~2~~ 11 8 12 8 8 7 16 10 8 5 8
2 4 5 5 5 6 7 8 9 9 10 11 12 15

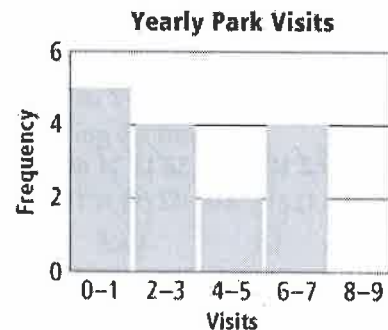
4 classes $\frac{15-2}{4} = \frac{13}{4} = 3.25 \rightarrow 4$

Class	Freq.	Cum. Freq.
2-5	5	5
6-9	5	10
10-13	3	13
14-17	1	14



The histogram at the right shows the number of times that 13 people visited the local town park.

- What is the greatest number of times that any person visited the town park?
6 or 7 visits; can't tell for certain.
- How many people visited the park fewer than 4 times?
9 people (5+4)
- Which interval represents the greatest number of visitors?
0-1 visits (5 people)



Lesson 12-3

Find the mean, median, and mode of each data set.

7. cost of lunch: \$4.50 \$6.00 \$5.50 \$4.75 \$4.50 \$15.95 \$5.00
 4.50 4.50 4.75 5.00 5.50 6.00 15.95
 med

mean = $\frac{446.20}{7} = \$6.60$
 median = 5.00
 mode = 4.50

8. math test scores: 91 88 91 91 94 91 94 88 91 88 91 82
 82 88 88 88 91 91 91 91 91 94 94
 med

mean = $\frac{1080}{12} = 90$
 median = 91
 mode = 91

9. pages of homework: 22 22 33 33 73 52
 22 22 33 55 79
 med

mean = $\frac{40}{10} = 4$
 median = 3
 mode = 2

Find the mean, median, mode, and range of each data set after you perform the given operation on each data value.

10. 4, 11, 14, 14, 22; add 3
 7 14 17 17 25
 mean = $\frac{80}{5} = 16$
 med = 17
 mode = 17
 range = 25 - 7 = 18

11. 3, 2, 5, 7, 5, 8, 7, 4, 5, 4; subtract 2
~~1 0 3 5 3 6 5 2 3 2~~
 0 1 2 2 3 3 5 5 6
 mean = $\frac{30}{10} = 3$
 med = 3
 mode = 3
 range = 6 - 0 = 6

12. 1.1, 2.3, 6.1, 4.5, 1.7, 2.3; multiply by 2
~~2.2 4.6 12.1 9 3.4 4.6~~
 2.2, 3.4, 4.6, 4.6, 9, 12.1
 range = 12.1 - 2.2 = 9.9
 med = 4.6
 mode = 4.6

13. 31, 12, 2, 27, 27, 5, 20, 14, 15; divide by 3.2
 15.5, 6, 1, 13.5, 13.5, 2.8, 16, 7, 7.5
 1, 2.5, 6, 7, 7.5, 10, 13.5, 13.5, 15.5
 mean = $\frac{76.5}{9} = 8.5$
 med = 7.5
 mode = 13.5
 range = 15.5 - 1 = 14.5

14. You are training for a marathon. On the first three days of training, you run for 2, 4, and 5 miles. How many miles should you run on the fourth day so that you run a mean of 4 miles per day?

$$\frac{2+4+5+x}{4} = 4$$

$$11+x = 16$$

$$x = 5$$

You should run 5 miles on the 4th day.

Lesson 12-4

Find the minimum, first quartile, median, third quartile, and maximum of each data set.

15. 13 7 19 20 14 27 10
 (7) (10) 13 (14) 19 (20) (27)
 min Q1 med Q3 max

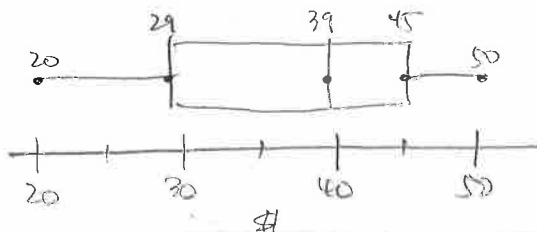
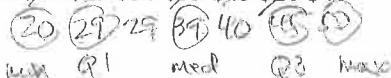
16. 56 73 28 94 47 49
 (28) 47 (49) 56 (73) max
 min Q1 med Q3

17. 49 2 12 78 24 56 13 71 49 38 27
 (2) 12 (13) 24 27 (38) 49 49 (56) 71 (78)
 min Q1 med Q3 max

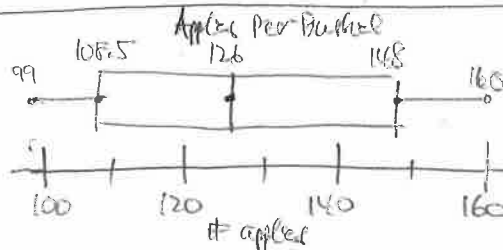
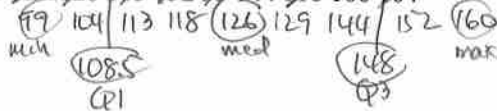
18. 11 5 28 12 9 26 1 19
 (1) 5 9 11 12 17 25 (26)
 min Q1 med Q3 max

Make a box-and-whisker plot to represent each set of data.

19. video game prices: \$29 \$29 \$50 \$39 \$45 \$20 \$40



20. apples per bushel: 129 126 113 152 99 144 118 160 104



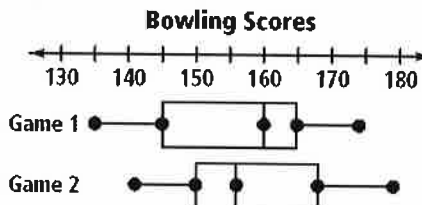
21. Two games are played during a bowling tournament. The box-and-whisker plots show the scores of the bowlers in each game.

a. Which game has the greater interquartile range of bowling scores? Game 1

$$Q3 - Q1 = 165 - 145 = 20$$

b. What is the first quartile of game 2? 150

c. Which game has the greatest median? Game 1
 med = 160



Lesson 12-7

The results of rolling a number cube 54 times are shown at right. Use the results to find each experimental probability.

6	3	4	5	1	1	5	5	3	6	3	2	1	3	3	2	1	13	
2	3	6	3	3	4	5	1	2	2	6	3	3	6	5	4	5	3	10
2	5	1	4	5	2	6	2	5	2	1	2	5	3	2	4	6	3	8

22. $P(3) = \frac{14}{54} = \frac{7}{27}$

23. $P(\text{not } 1) = \frac{47}{54}$

24. Which is greater: the theoretical or experimental probability of rolling an odd number?

Explain.

$$\rightarrow P(\text{odd}) = \frac{1}{2} = 0.5$$

$$\rightarrow P(\text{odd}) = \frac{31}{57} \approx 0.54$$

The experimental probability is higher.

25. You roll a blue number cube and a red number cube. What is the probability of rolling a 5 on the blue cube and a number less than 4 on the red cube?

$$P(5 \text{ on blue and } < 4 \text{ on red}) = \frac{1}{6} \cdot \frac{1}{2} = \frac{1}{12}$$

26. A bag contains 3 green marbles, 5 red marbles, and 1 yellow marble. You pick two marbles from the bag. You pick the second marble without replacing the first.

a. Find $P(\text{two greens})$. $= \frac{3}{9} \cdot \frac{2}{8} = \frac{1}{3} \cdot \frac{1}{4} = \frac{1}{12}$

b. Find $P(\text{yellow then red})$. $= \frac{1}{9} \cdot \frac{5}{8} = \frac{5}{72}$