

Unit 14—15 Study Guide

Use the bar graph for Exercises 1–3.

- Which shark lived longer than any other shark?

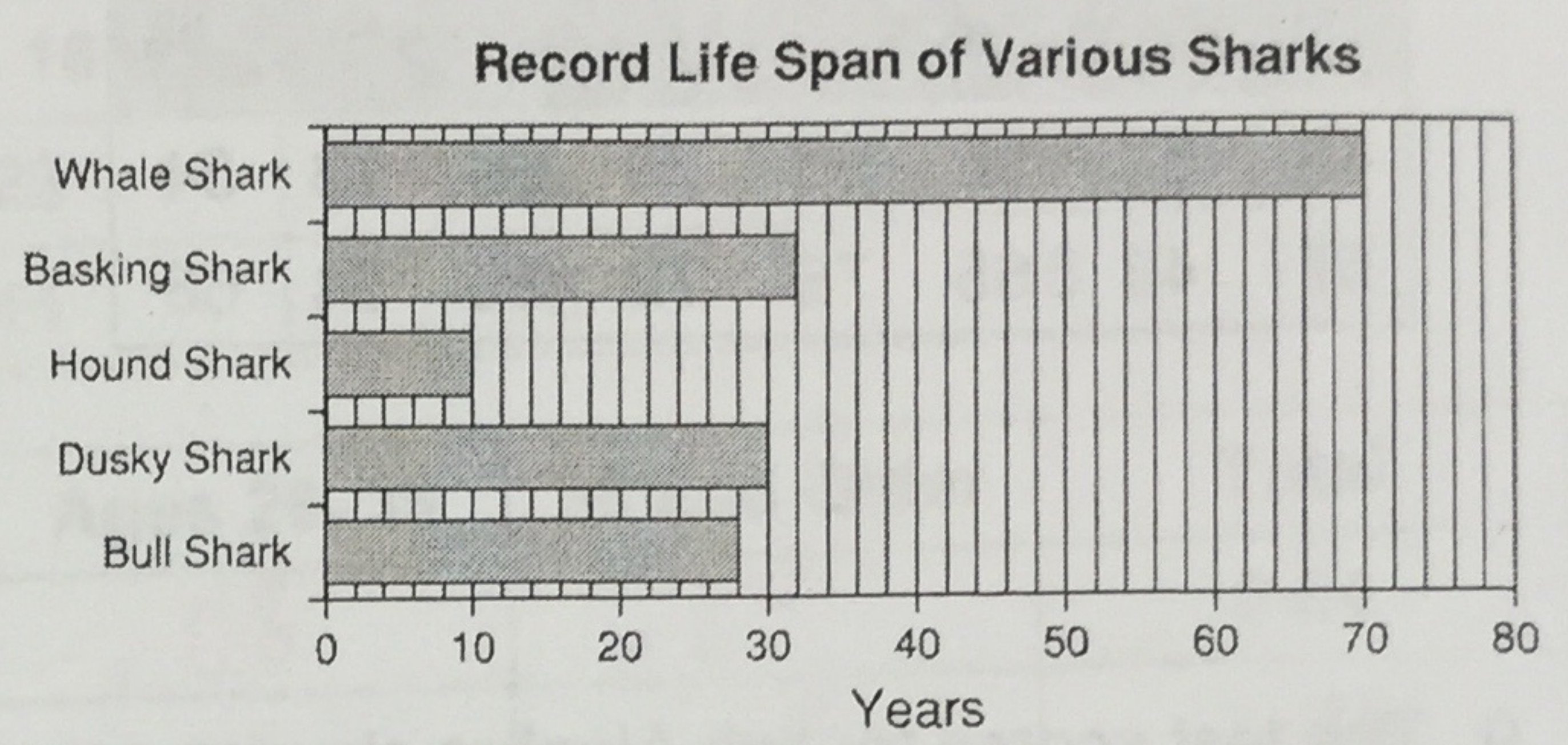
Whale

- About how long did the Basking Shark live?

32 yrs

- Which shark lived about one-third as long as the Dusky Shark?

Hound



Use the line graph for Exercises 4–6.

- In what month was the cost of diesel fuel and regular unleaded the same?

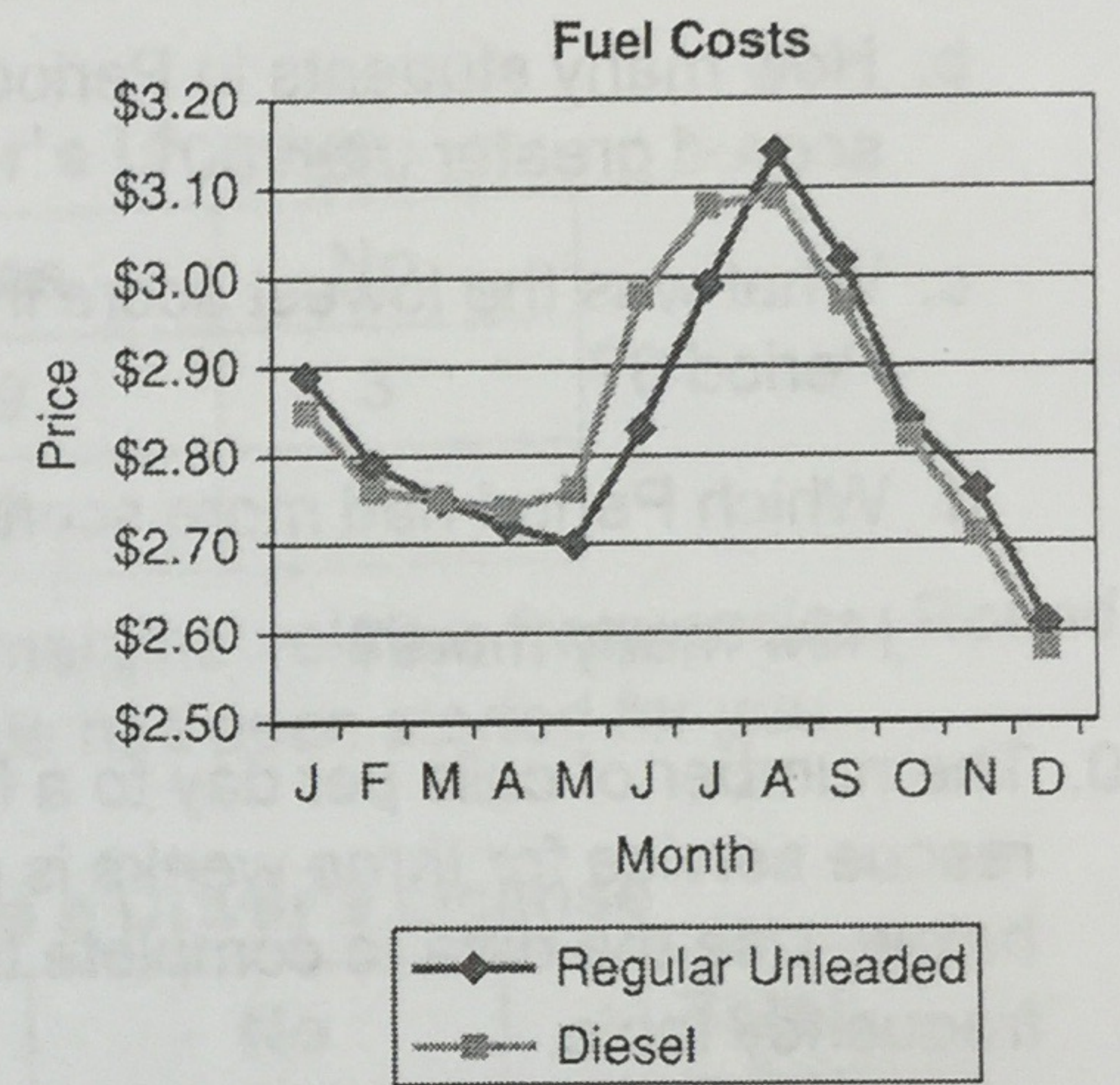
March

- For how many months was the cost of diesel fuel more than regular unleaded?

4

- About how much more was the cost of diesel fuel in July than in December?

50¢ - 60¢

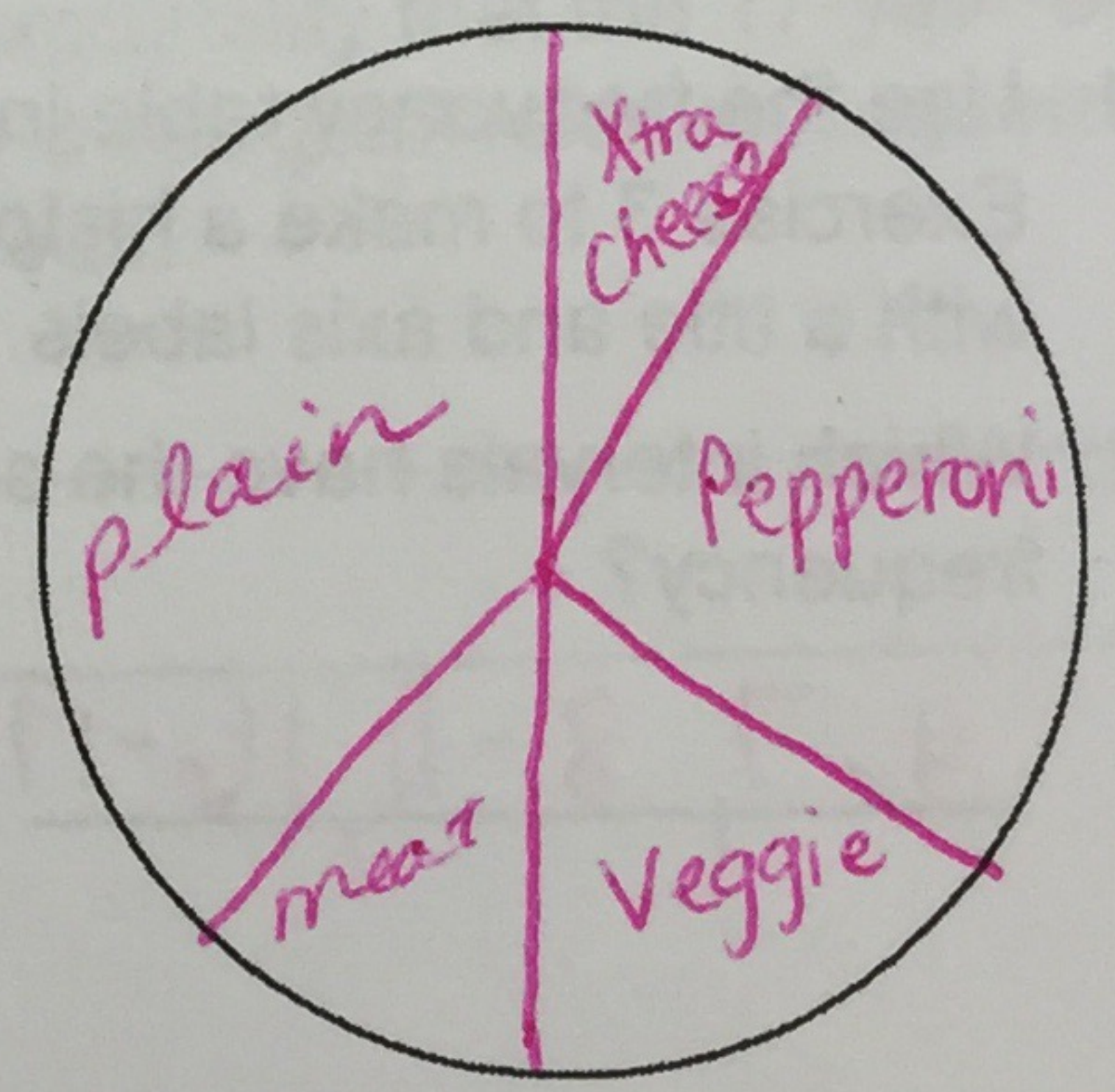


- The table shows what types of pizzas were ordered at Vinnie's Restaurant one weekend. Use the data to make a circle graph. Then tell why a circle graph is appropriate for this data set.

Type	Number of Orders
extra cheese	15
pepperoni	55
veggie	30
meat	30
plain	70

100 {
100 {
200 total

7.5%
27.5%
15%
15%
35%



8. The number of rushing yards completed by a running back on a professional football team in each of the 16 regular season games is given. Use the data to make a stem-and-leaf plot with a title and a key.

Rushing Yards							
43	52	98	96	74	32	73	54
57	48	65	78	72	83	54	68

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

Key: 4|3 means 43

9. The test scores for two Algebra classes are shown in the stem-and-leaf plot.

Period 5				Period 3			
4	2	0	0	5	3		
	6	5	2	6	8	9	
7	7	4	2	7	2	9	9
		8	3	8	4	4	4
	9	3	1	9	1	3	3
				10	0	0	6

Key: |6|8 means 68
3|8| means 83

a. How many students scored 100? 2

b. How many students in Period 5 scored greater than 80? 5

c. What was the lowest score in Period 3? 53

d. Which Period had more scores?
How many more? 5; 1

10. The number of calls per day to a fire and rescue service for three weeks is given below. Use the data to complete the frequency table.

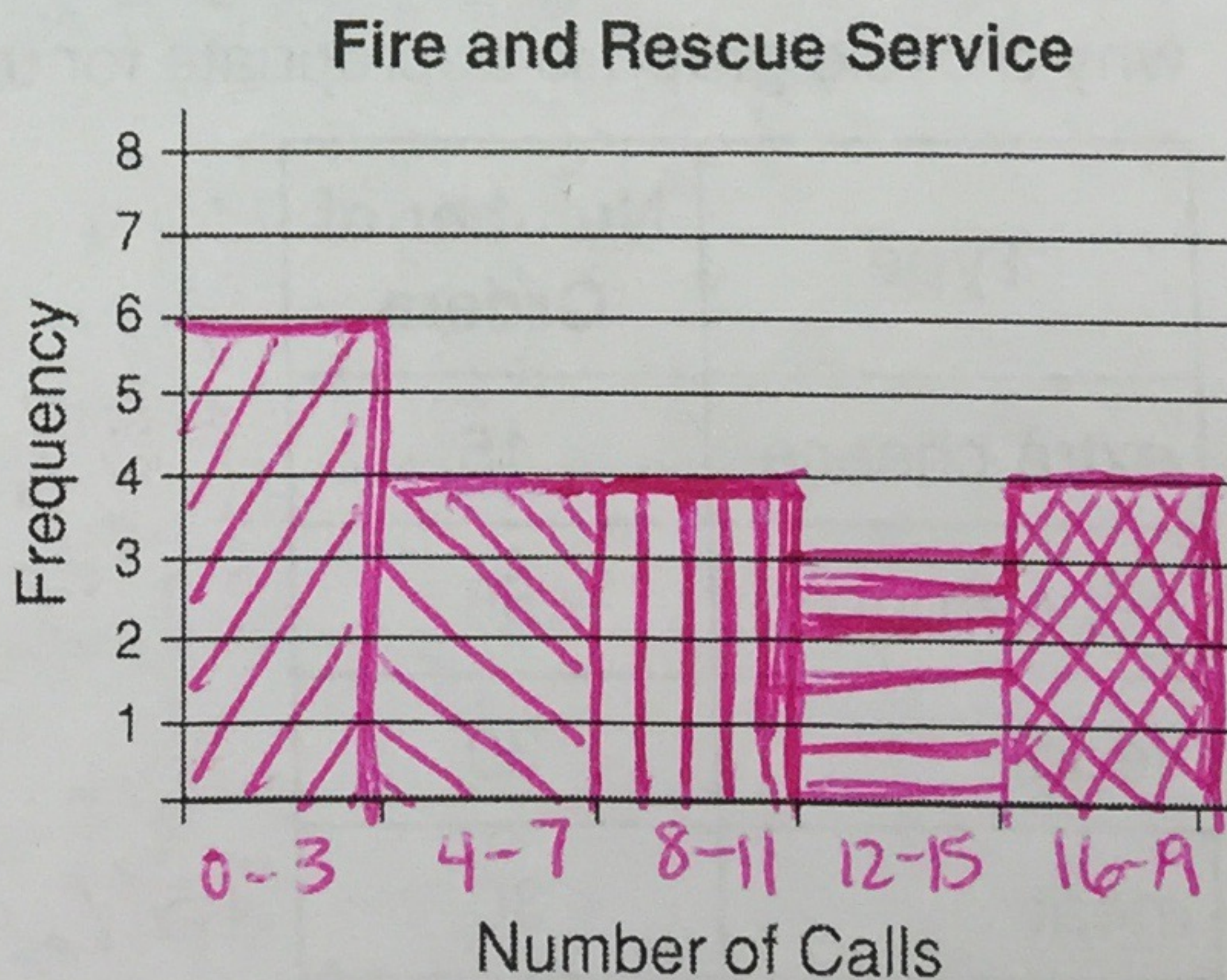
Calls for Service										
5	17	2	12	0	6	3	8	15	1	4
19	16	8	2	11	13	18	3	10	6	

Fire and Rescue Service	
Number of Calls	Frequency
0 - 3	6
4 - 7	4
8 - 11	4
12 - 15	3
16 - 19	4

11. Use the frequency table in Exercise 3 to make a histogram with a title and axis labels.

12. Which intervals have the same frequency?

4-7, 8-11, 16-19



13. The table shows the results of a survey of 100 randomly-selected people entering an amusement park who were asked whether they were planning to ride the Monster Loop, a rollercoaster. Make a table of joint and marginal relative frequencies. The table has been started for you.

	Ages 8–15	Ages 16–25	Ages 26–35	36 and Older
Yes	19	23	8	14
No	8	11	12	5

	Ages 8–15	Ages 16–25	Ages 26–35	36 and Older	Total
Yes	0.19	.23	.08	.14	0.64
No	.08	.11	.12	.05	.36
Total	.27	.34	.2	.19	1

14. Thomas collected data on 25 randomly selected 17-year-olds at his school, and summarized the results in a table.

		Has a Driver's License	
		Yes	No
Has a Job	Yes	9	3
	No	8	5

- a. Make a table of the joint relative frequencies and marginal relative frequencies. Round to the nearest hundredth where appropriate. The table has been started for you.

		Has a Driver's License		
		Yes	No	Total
Has a Job	Yes	.36	0.12	.48
	No	.32	.2	.52
	Total	0.68	.32	1

- b. If you are given that a 17-year-old has a job, what is the probability that the 17-year-old also has a driver's license? Divide a joint relative frequency by a marginal relative frequency to find the answer. Round your answer to the nearest hundredth.

.75 $(.36/.48)$

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

15. 7, 19, 25, 9, 10

Order the numbers: 7, 9, 10, 19, 25

mean: $\frac{7 + 9 + 10 + 19 + 25}{5} = 14$

median: 10

mode: none

range: $25 - 7 = 18$

16. 5, 3, 3, 5, 2, 5, 5

Order the numbers: 2, 3, 3, 5, 5, 5, 5

mean: 4

median: 5

mode: 5

range: 3

17. 8, 12, 17, 12, 9, 8

mean: 11

median: 10.5

mode: 8, 12

range: 9

Identify the outlier in each data set, and determine how the outlier affects the mean, median, mode, and range of the data.

18. 7, 11, 29, 3, 10

19. 52, 39, 11, 44

outlier = 29; increases mean by 4.25, median by 1.5, and range by 18

outlier = 11; decreases mean by 8.5, median by 1.5, and range by 18

20. Mr. Bernard drove 46, 4, 64, 50, and 56 miles on his last five trips. For each question, choose the mean, median, or mode, and give its value.

a. Which value describes Mr. Bernard's average driving distance? mean = 44

b. Which value would Mr. Bernard tell his boss to convince him that he spends too much time on the road? Explain.

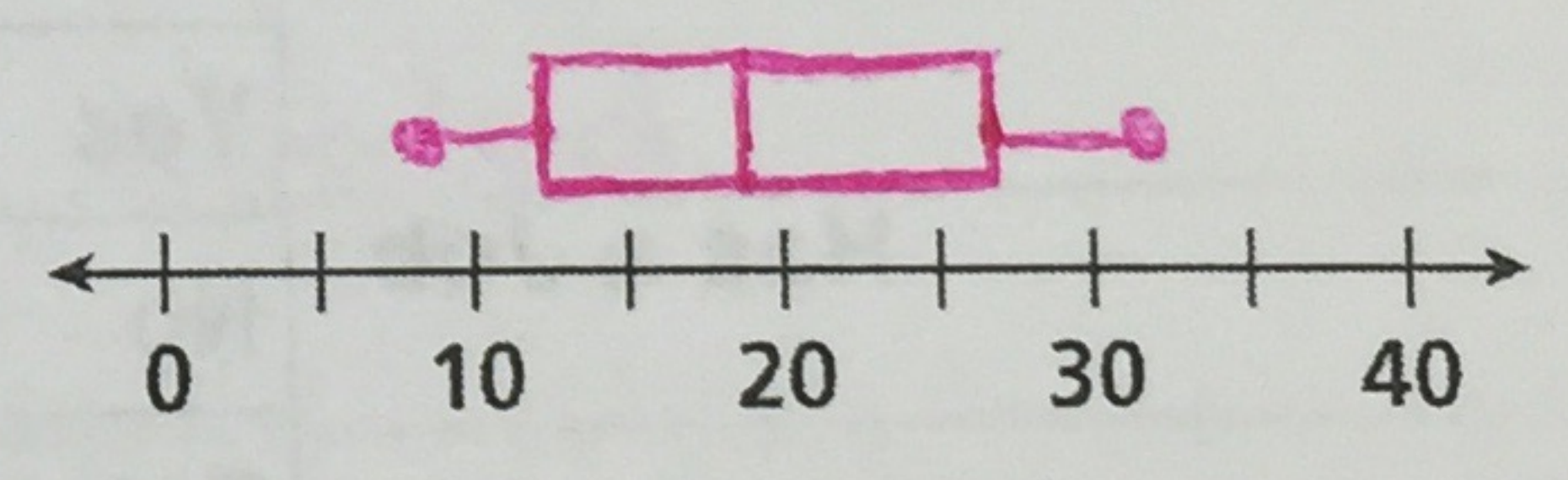
median b/c it is 50 which is higher than the mean

21. Use the data to make a box-and-whisker plot. 18, 22, 10, 22, 30, 8, 33, 15, 14

a. Order the data: 8, 10, 14, 15, 18, 22, 22, 30, 33

b. Min: 8, Q1: 12, Med: 18,

Q3: 26, Max: 33

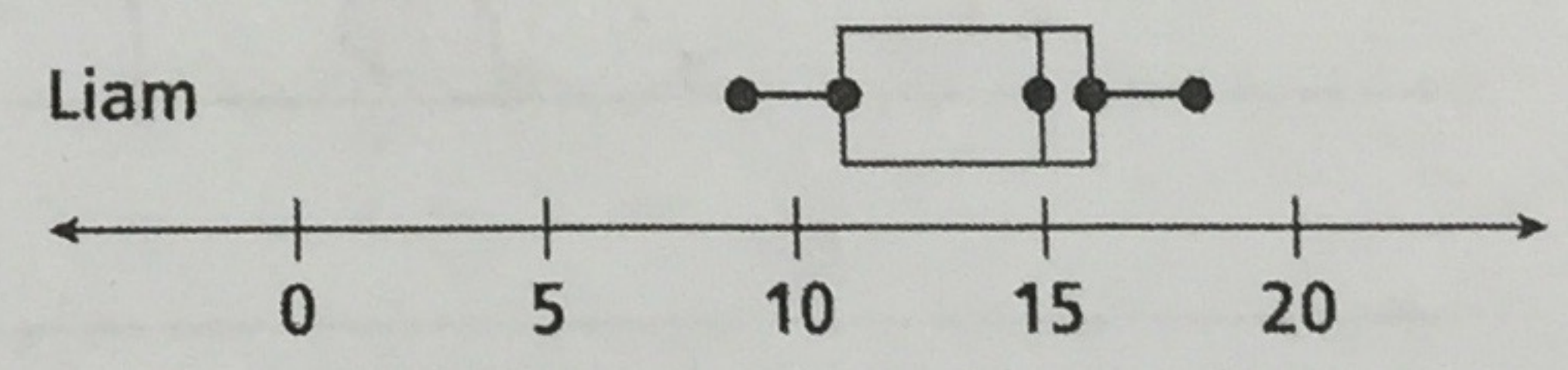
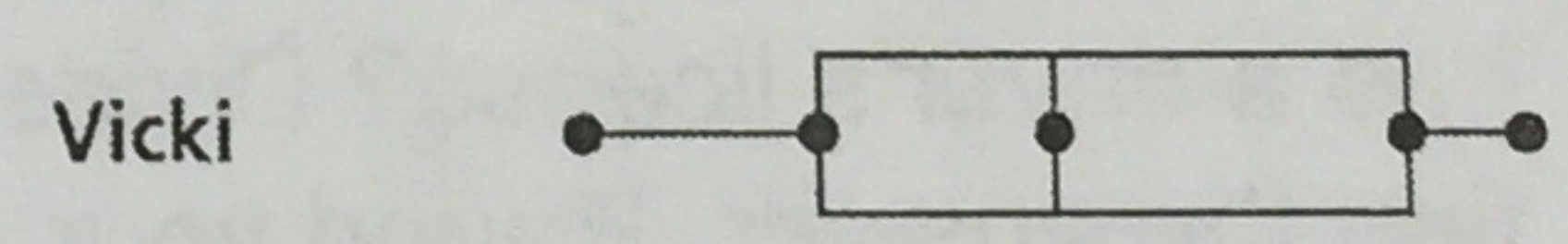


The quiz scores of two students are shown in the box-and-whisker plots.

22. Who has the higher median score? Liam

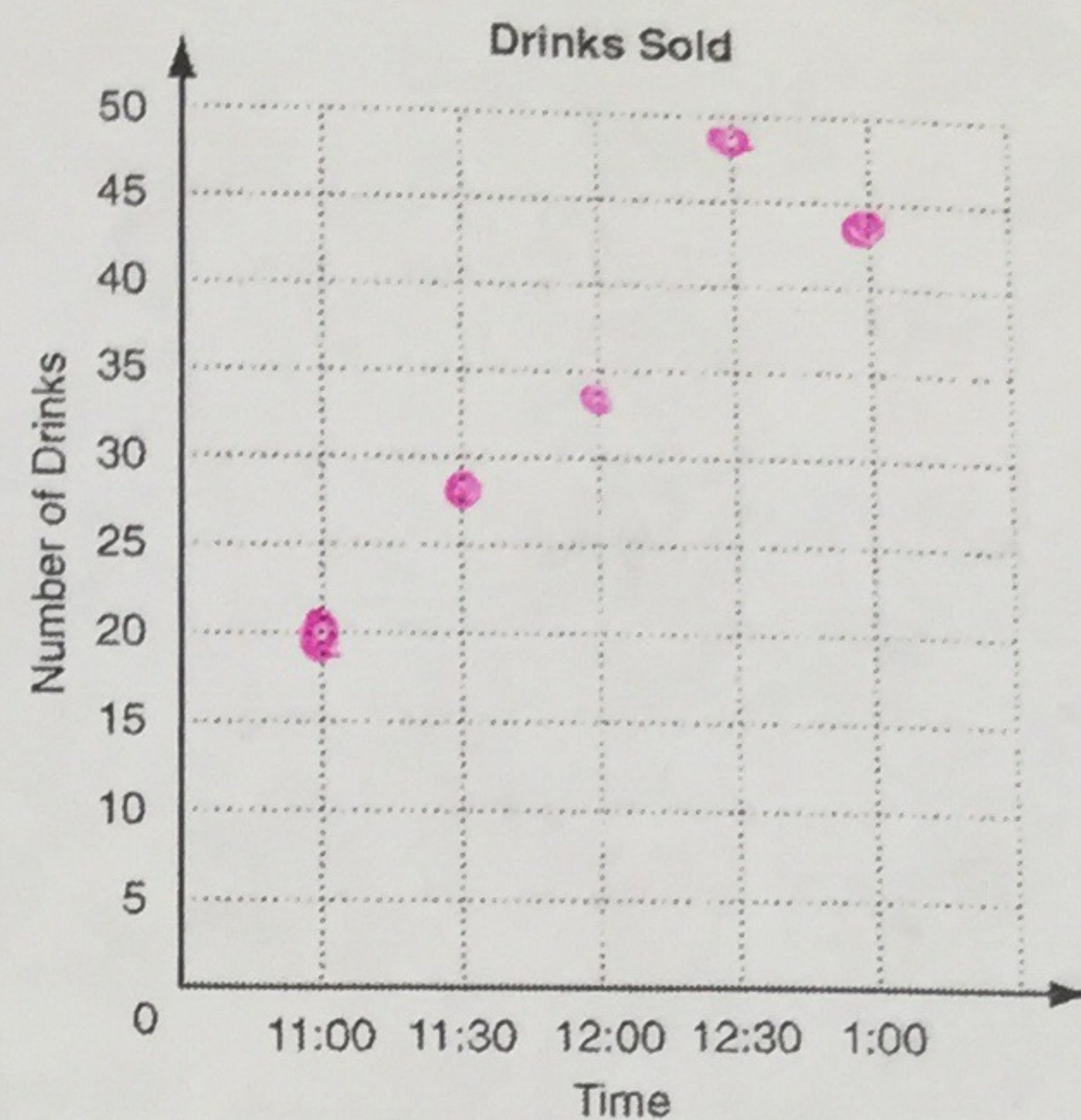
23. Who has the highest score? Vicki

24. Who has the most consistent scores? Liam



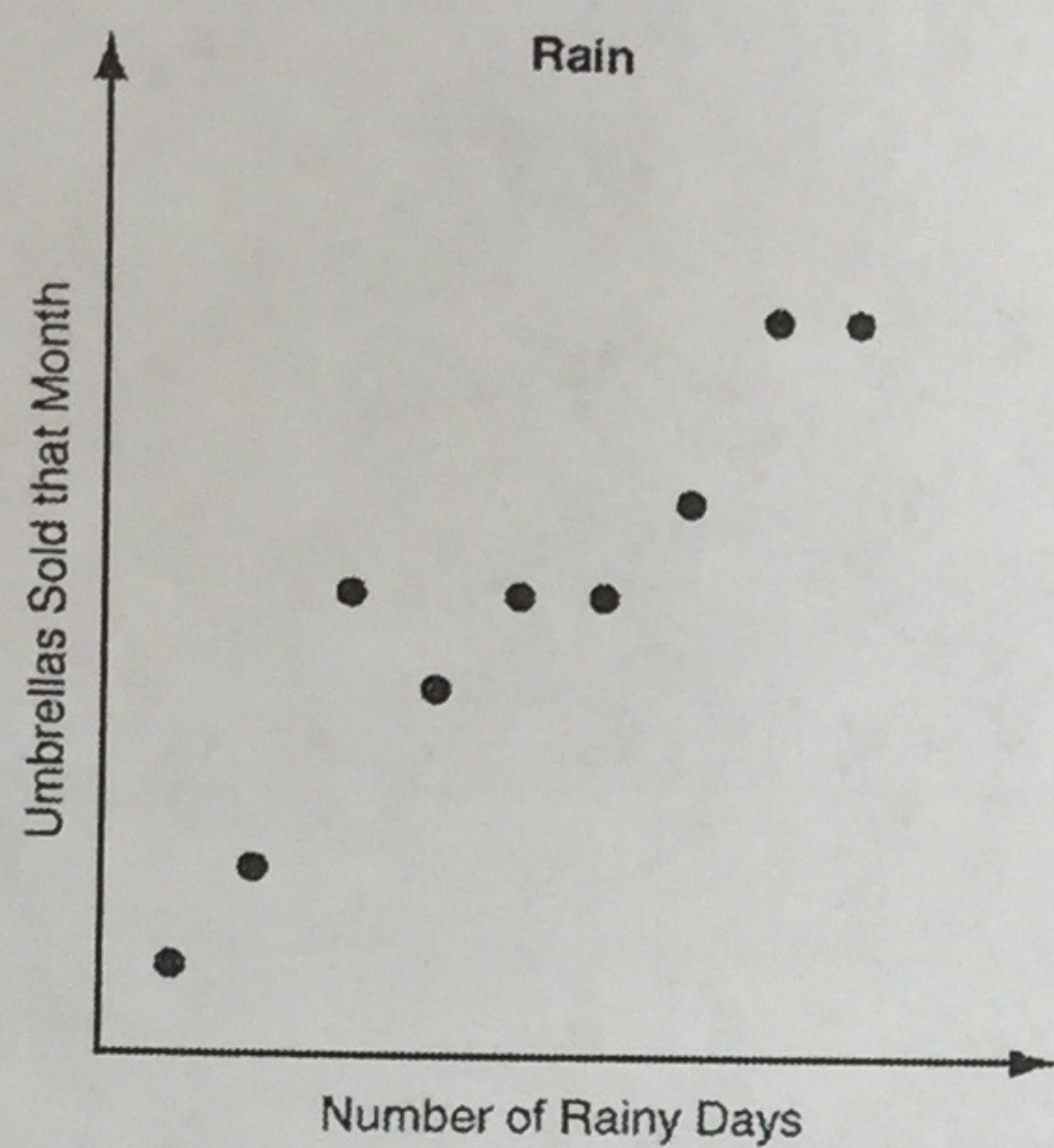
25. The table shows the number of soft drinks sold at a small restaurant from 11:00 am to 1:00 pm. Graph a scatter plot using the given data.

Time of Day	11:00	11:30	12:00	12:30	1:00
Number of Drinks	20	29	34	49	44



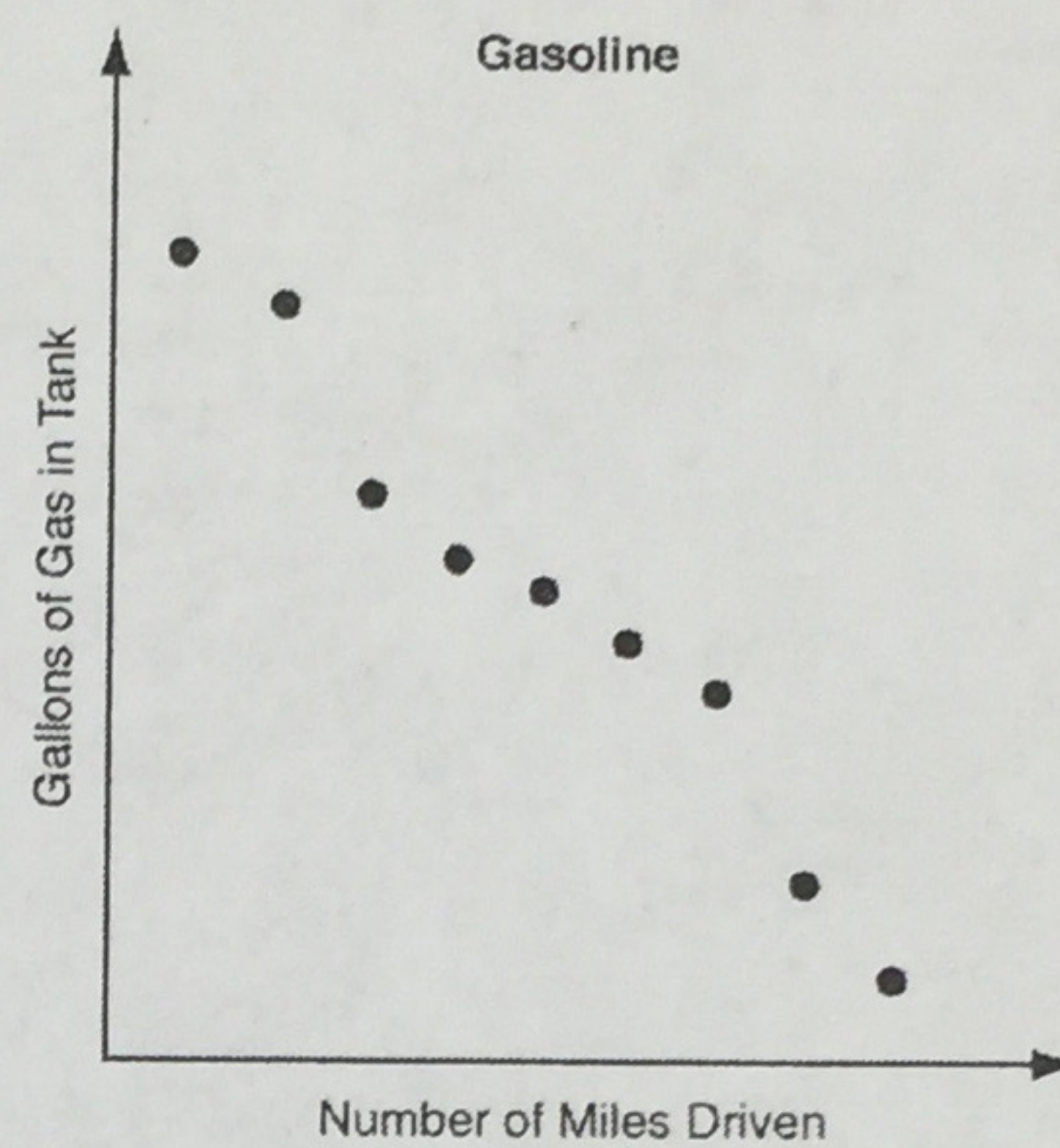
Write *positive*, *negative*, or *none* to describe the correlation illustrated by each scatter plot.

26.



positive

27.



negative

Identify the correlation you would expect to see between each pair of data sets. Explain.

28. the temperature during the day and the number of people in the pool

positive → high temp = more people

29. the height of an algebra student and the number of phone calls they make in one week

no correlation → nothing related

30. The scatter plot at right shows a relationship between the number of batteries needed and the number of toys. Predict how many batteries will be needed for 11 toys.

about 38

