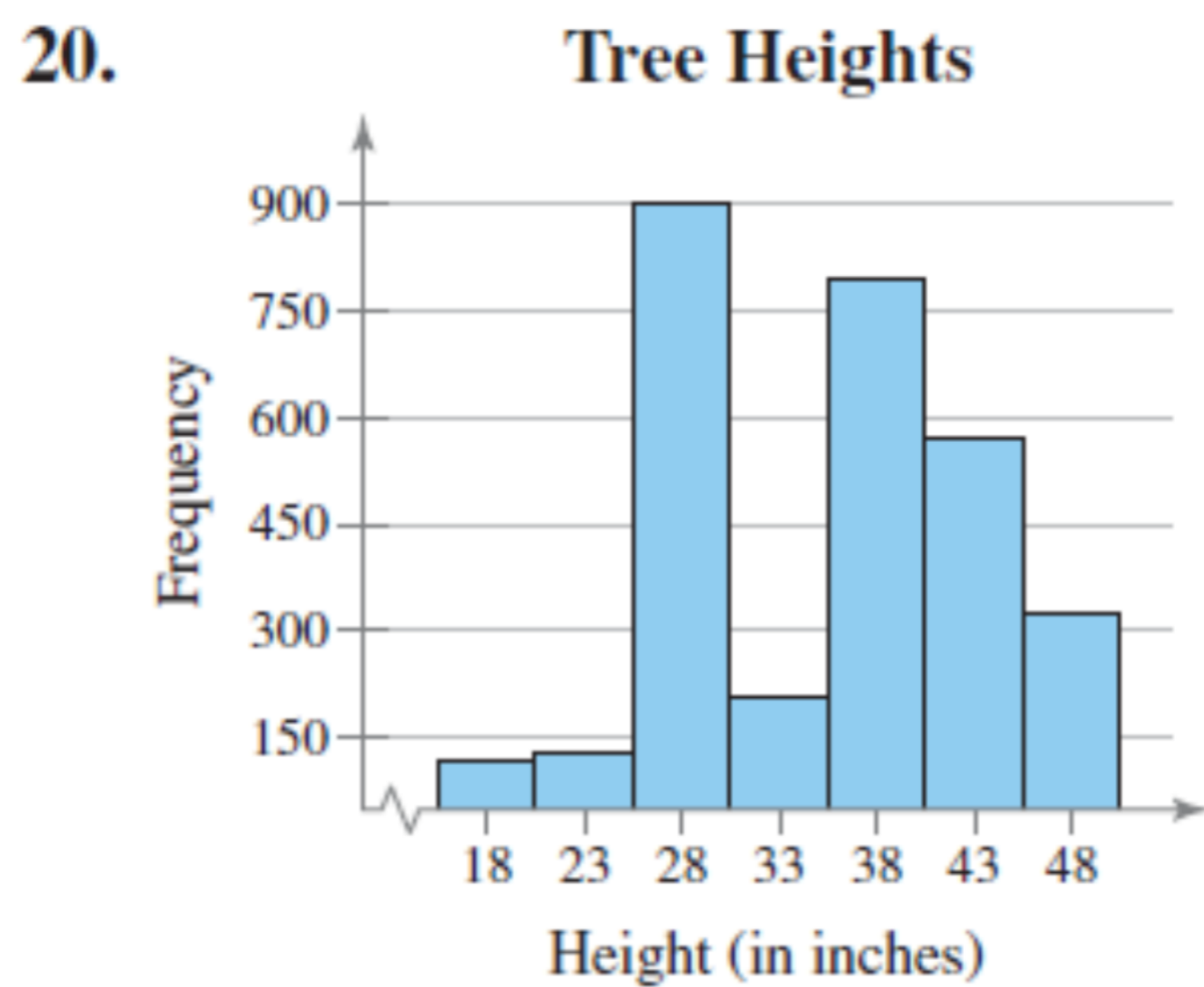
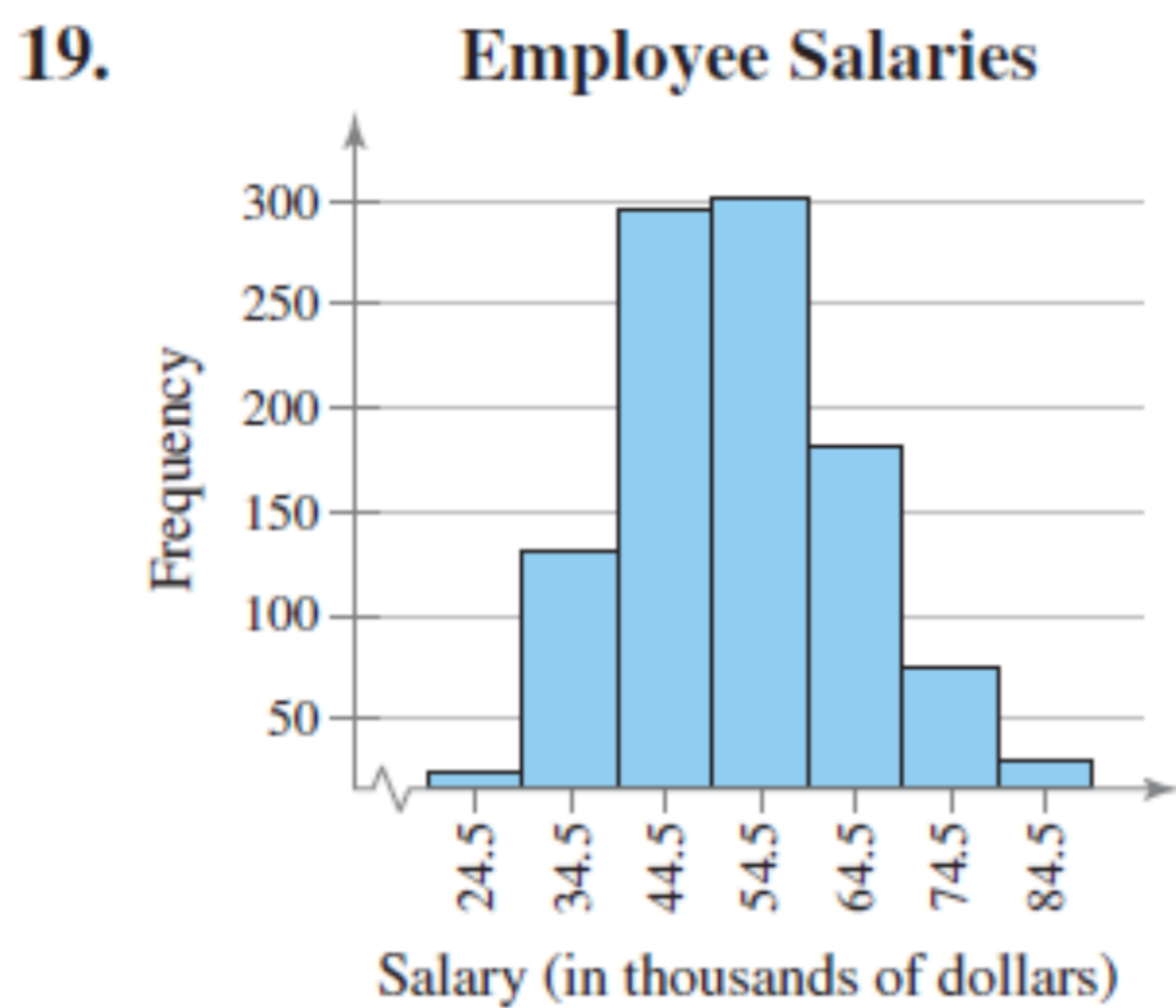


Ex 2.1 Page 47 (19, 20, 24, 25, 26, 31, 39)

Graphical Analysis In Exercises 19 and 20, use the frequency histogram to

- (a) determine the number of classes.
- (b) estimate the frequency of the class with the least frequency.
- (c) estimate the frequency of the class with the greatest frequency.
- (d) determine the class width.

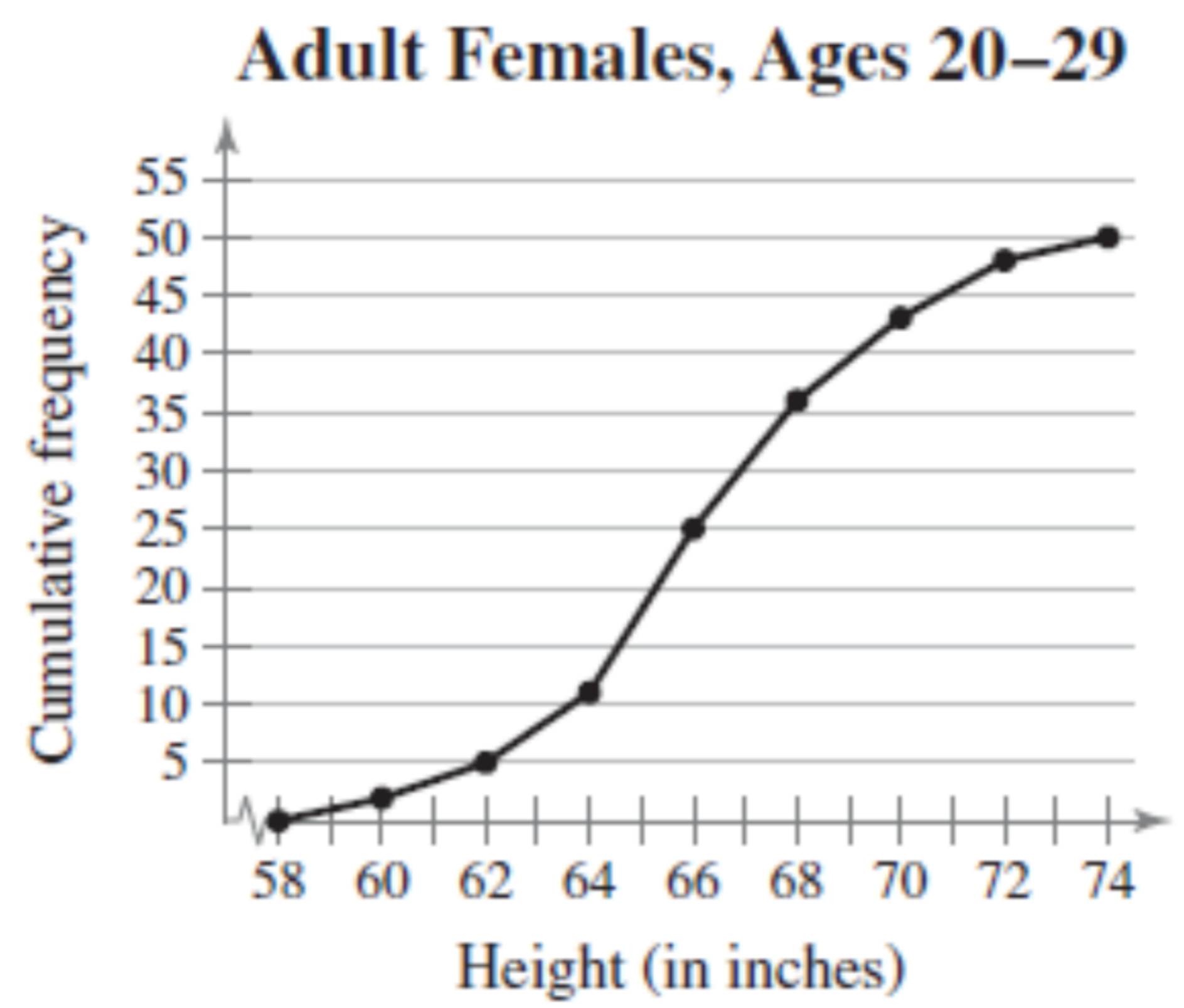


- a) 7
- b) 10
- c) 300
- d) 10

- a) 7
- b) 90
- c) 900
- d) 5

24. Use the ogive in Exercise 22 to approximate

- (a) the cumulative frequency for a height of 72 inches.
- (b) the height for which the cumulative frequency is 25.
- (c) the number of adult females that are between 62 and 66 inches tall.
- (d) the number of adult females that are taller than 70 inches.



a) 48

b) 66 inches

c) $25 - 5 = 20$

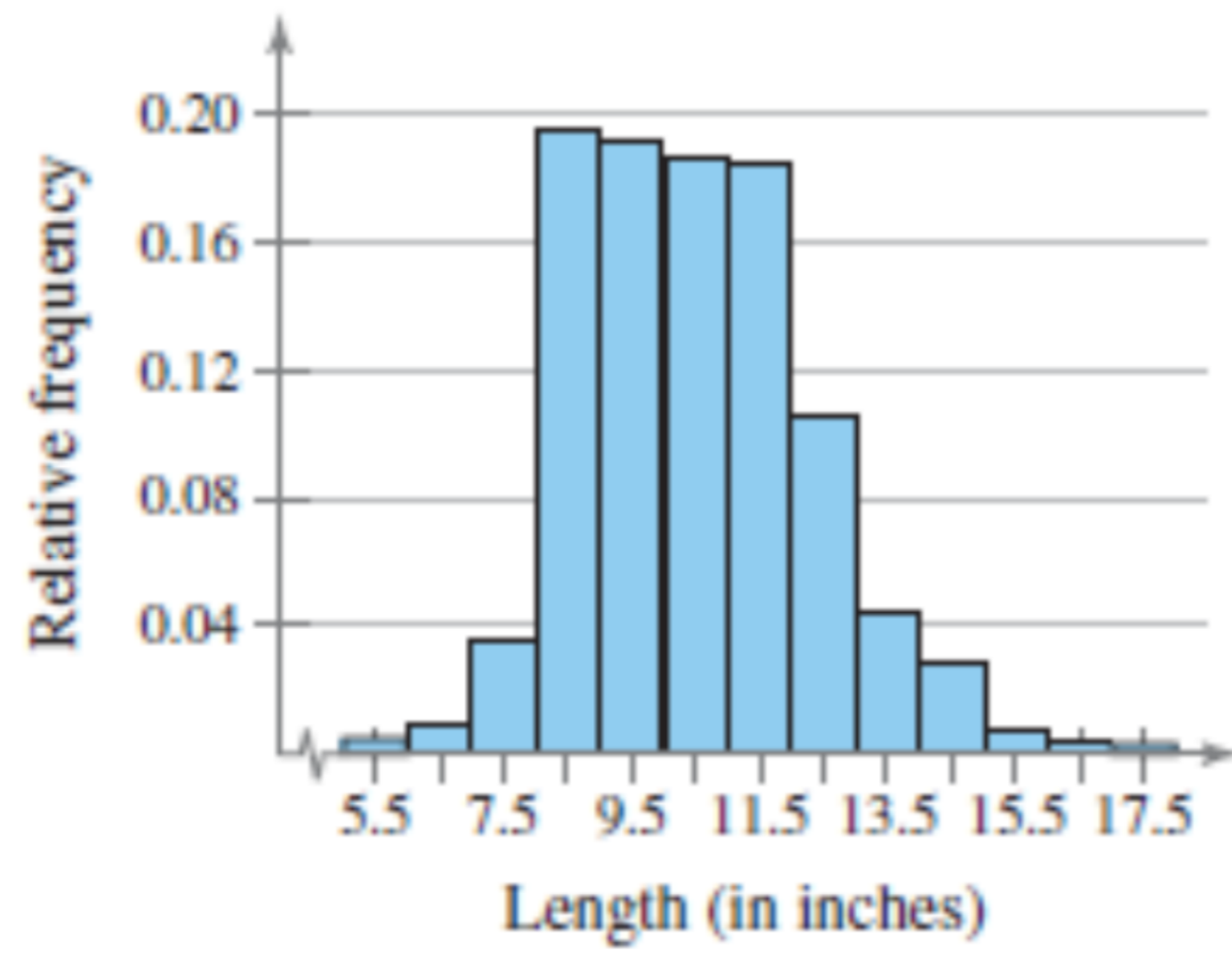
d) $50 - 43 = 7$

Graphical Analysis In Exercises 25 and 26, use the relative frequency histogram to

- (a) identify the class with the greatest, and the class with the least, relative frequency.
- (b) approximate the greatest and least relative frequencies.
- (c) approximate the relative frequency of the second class.

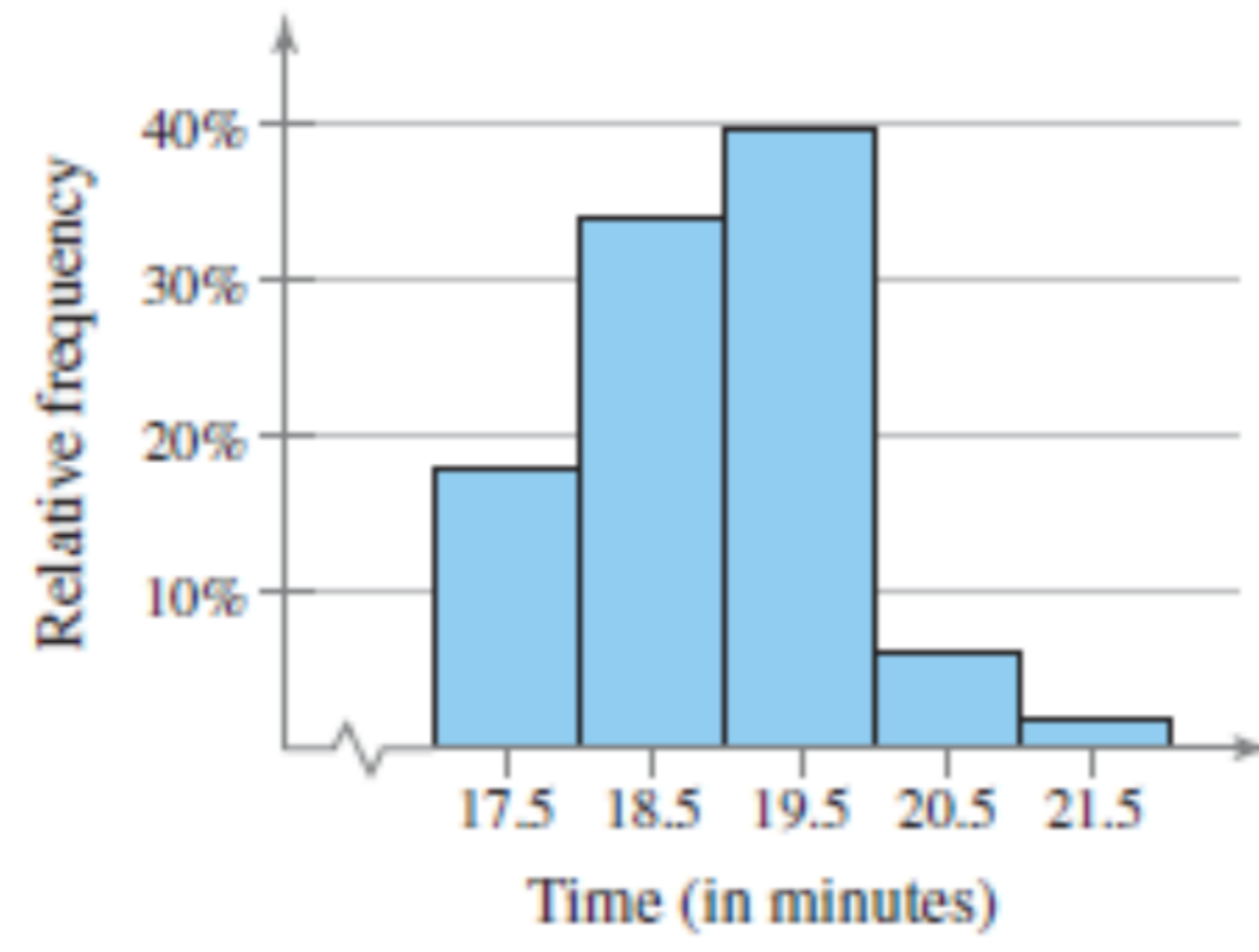
25.

Atlantic Croaker Fish



26.

Emergency Response Times



a) greatest: 8-9
least: 17-18

b) greatest: 0.198
least: 0.003

c) 0.01

a) greatest: 19-20
least: 21-22

b) greatest: 40%
least: 2%

c) 33%

Constructing a Frequency Distribution and a Frequency Histogram

In Exercises 31–34, construct a frequency distribution and a frequency histogram for the data set using the indicated number of classes. Describe any patterns.

31. Sales

Number of classes: 6

$$k = 6$$

Data set: July sales (in dollars) for all sales representatives at a company

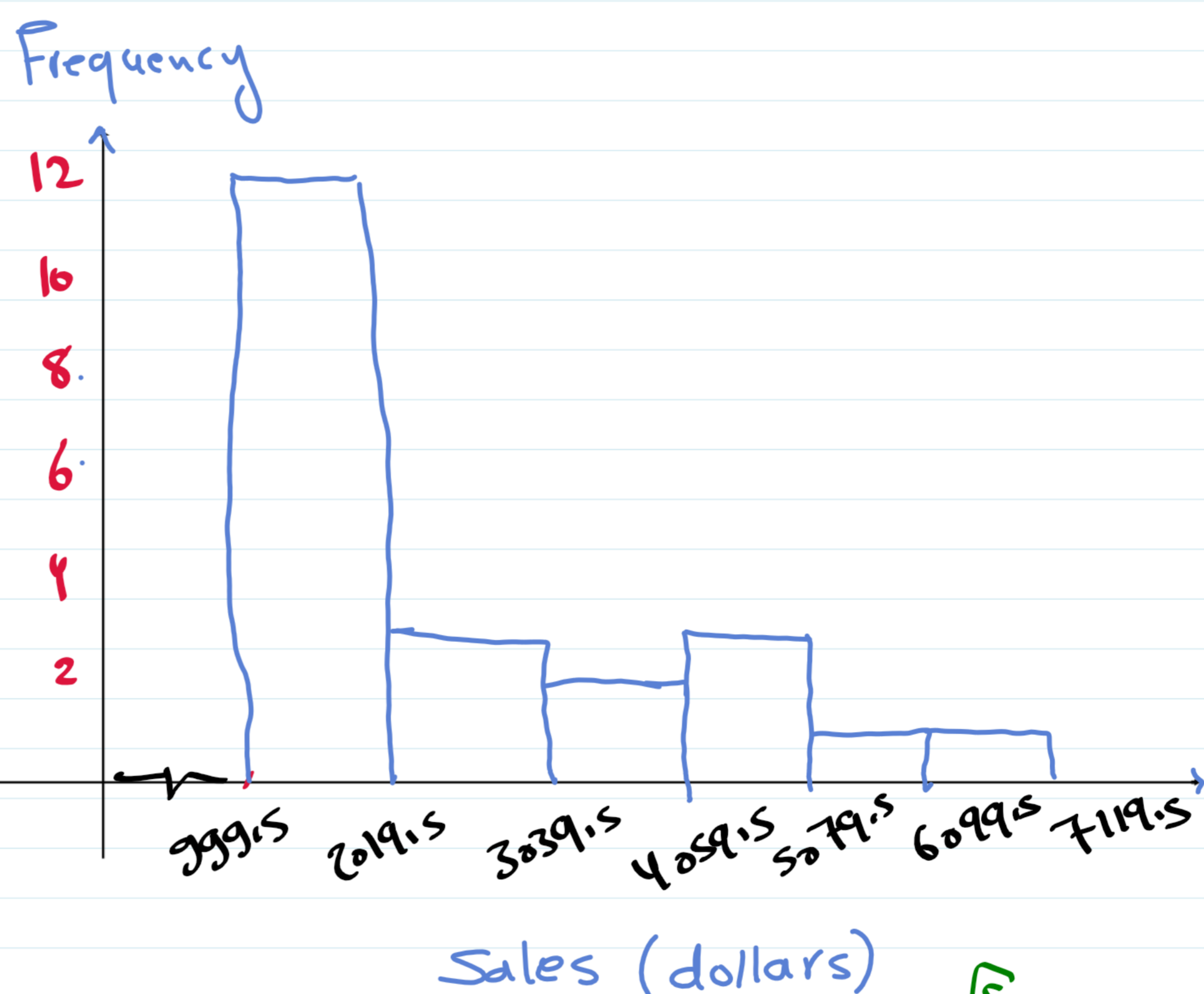
2114 2468 7119 1876 4105 3183 1932 1355
4278 1030 2000 1077 5835 1512 1697 2478
3981 1643 1858 1500 4608 1000

Sol → $R = 7119 - 1000 = 6119$

$$W = \frac{R}{k} = \frac{6119}{6} \approx 1020$$



class	Frequency	True class
1000 - 2019	12	999.5 - 2019.5
2020 - 3039	3	2019.5 - 3039.5
3040 - 4059	2	3039.5 - 4059.5
4060 - 5079	3	4059.5 - 5079.5
5080 - 6099	1	5079.5 - 6099.5
6100 - 7119	1	6099.5 - 7119.5
Total	22	



Frequency distribution table

Histogram

Constructing a Cumulative Frequency Distribution and an Ogive
 In Exercises 39 and 40, construct a cumulative frequency distribution and an ogive for the data set using six classes. Then describe the location of the greatest increase in frequency.

$$k = 6$$

39. Retirement Ages

Data set: Retirement ages for a sample of doctors

70 54 55 71 57 58 63 65
 60 66 57 62 63 60 63 60
 66 60 67 69 69 52 61 73



Solution

$$R = \text{max} - \text{min} \\ = 73 - 52 = 21$$

$$w = \frac{R}{k} = \frac{21}{6} = 3.5 \approx 4$$

Class	Upper-class Boundaries	f	Relative frequency	Cummulative frequency
52-55	55.5	3	0.125	3
56-59	59.5	3	0.125	6
60-63	63.5	9	0.375	15
64-67	67.5	4	0.167	19
68-71	71.5	4	0.167	23
72-75	75.5	1	0.042	24
Total		24	1	

