

## Data


## Representing and Analyzing Data

7.2.1 Line Graphs

The table at right shows the number of teams in the National Basketball Association (NBA). Use the table for Exercises 1–3.

1. Make a line graph of the data. Use the graph to determine during which 5-year period the number of NBA teams increased the most.
2. During which 5-year period did the number of teams increase the least?

Year	Teams
1965	9
1970	14
1975	18
1980	22
1985	23
1990	27
1995	27
2000	29
2005	30



3. **Estimation** Use the graph to estimate the number of NBA teams in 1988.
4. The table below shows the normal daily temperatures in degrees Fahrenheit in Peoria, Illinois, and Portland, Oregon. Make a double-line graph of the data.

	Jul	Aug	Sept	Oct	Nov	Dec
Peoria	76	73	66	54	41	27
Portland	68	69	63	55	46	40

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**7.2.2 Choosing an Appropriate Display**

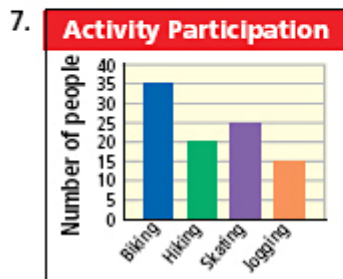
Choose the type of graph that would best represent each type of data.

5. the number of tracks on each of the 50 CDs in a CD collection

6. the number of runners in a marathon for the last five years

The table shows the number of people who participate in various activities. Explain why each display does or does not appropriately represent the data.

Activity	Biking	Hiking	Skating	Jogging
Number of People	35	20	25	15



8. **Stems | Leaves**

1	5
2	0 5
3	5

Key: 1|5 means 15

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**7.2.3 Populations and Samples**

9. Determine which sampling method will better represent the entire population. Justify your answer.

Midville Morning News: Subscription Renewals	
Sampling Method	Results of Survey
Suzanne surveys 80 subscribers in her neighborhood.	61% intend to renew subscription
Vonetta telephones 150 randomly-selected subscribers.	82% intend to renew subscription

Determine whether each sample may be biased. Explain.

10. A disc jockey asks the first 10 listeners who call in if they liked the last song that was played.
11. Members of a polling organization survey 700 registered voters by randomly choosing names from a list of all registered voters.
12. A university has 30,600 students. A survey is mailed to a random sample of 240 students, 20 of whom speak three or more languages. Predict the number of students at the university who speak three or more languages.

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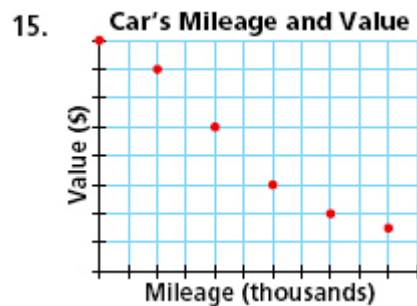
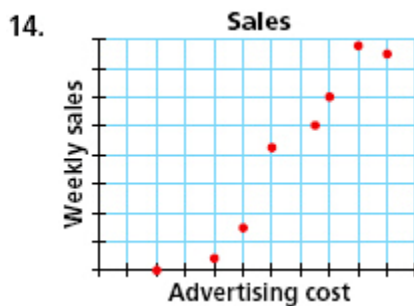
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7.2.4 Scatter Plots

13. The table shows solar energy cell capacity (in megawatts) over several years. Use the data to make a scatter plot. Describe the relationship between the data sets.

Year	Capacity	Year	Capacity
1990	13.8	1993	21.0
1991	14.9	1994	26.1
1992	15.6	1995	31.1

Write *positive correlation*, *negative correlation*, or *no correlation* to describe each relationship. Explain.



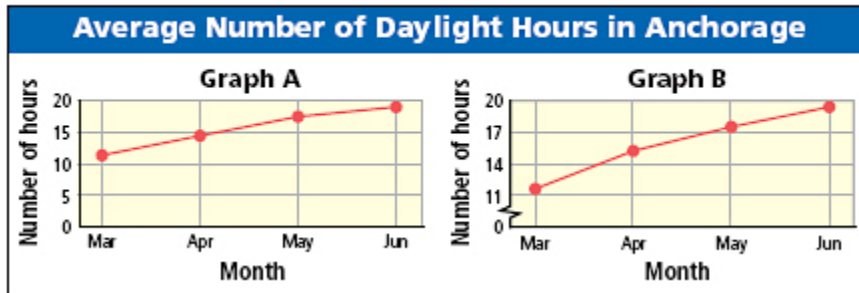
16. the number of students in a district and the number of buses in the district

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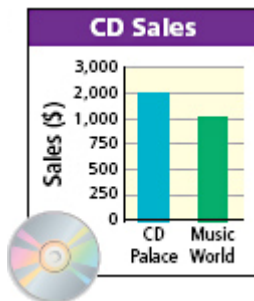
7.2.5 Misleading Graphs

17. Which graph could be misleading? Why?

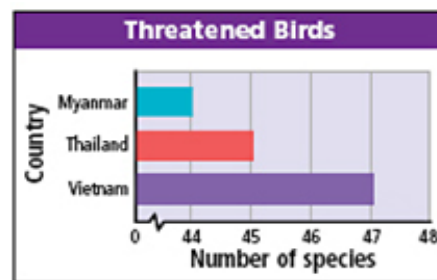


Explain why each graph could be misleading.

- 18.



- 19.



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20. **Business** Explain why the graphs below are misleading. Then tell how you can redraw them so that they are not misleading.

