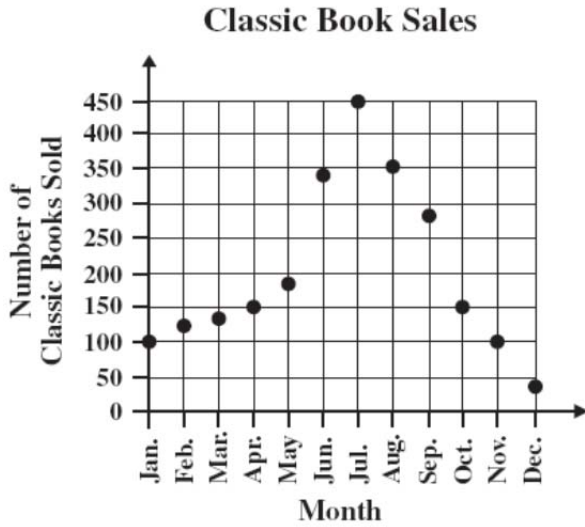1. The number of classic book Nanette sells in her bookshop varies according to the time of year, as shown in the scatterplot below.

**Classic Book Sales**

Based on the information in the scatterplot, the number of classic books sold—
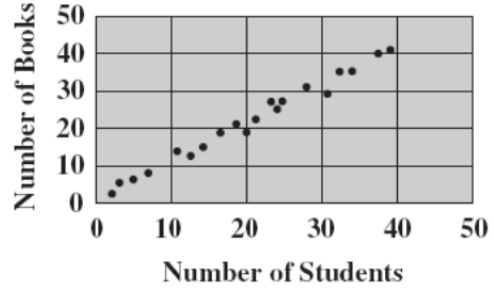
A decreases consistently from January through December.

B increases consistently from January through December.

C decreases until July and then increases until December.

D increases until July and then decreases until December.
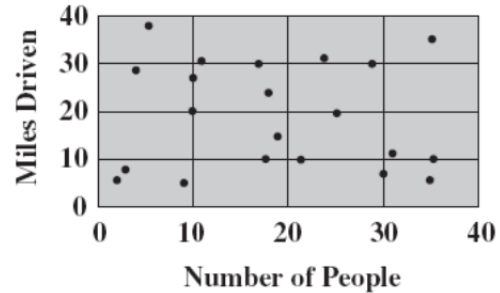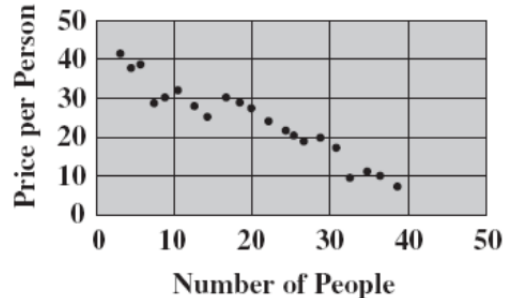
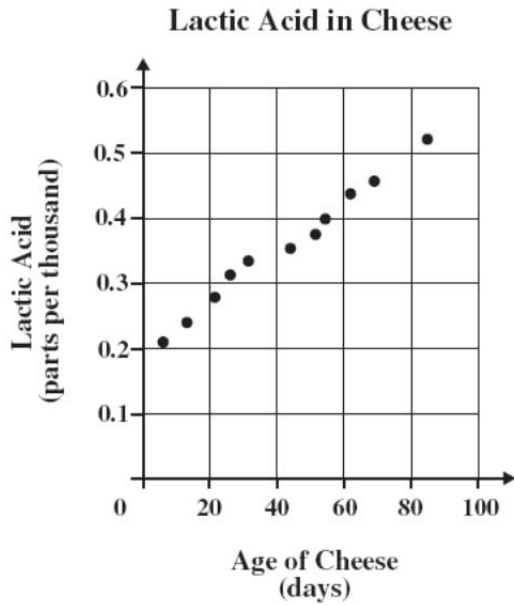**2.** Which scatterplot shows a positive correlation?

A
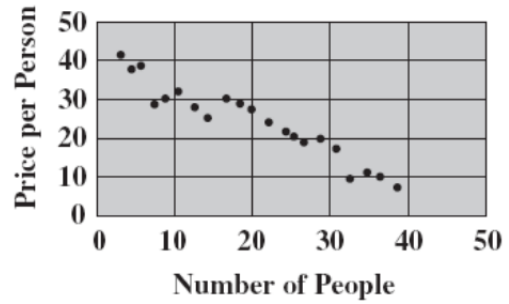
B

C

D

3. The scatterplot below shows the time cheese has been aging and the amount of lactic acid present in the cheese.

Lactic Acid in Cheese

Lactic Acid (parts per thousand) vs. Age of Cheese (days)

Which statement is MOST strongly supported by the scatterplot?

A The longer cheese ages, the more lactic acid is present.

B The longer cheese ages, the less lactic acid is present.

C The amount of lactic acid present remains constant as cheese ages.

D No relationship exists between the time cheese ages and the amount of lactic acid present.

4. The scatter plot below shows the ages of some children and the distance each child lives from school.

Distance from School

Distance (miles) vs. Age (years)
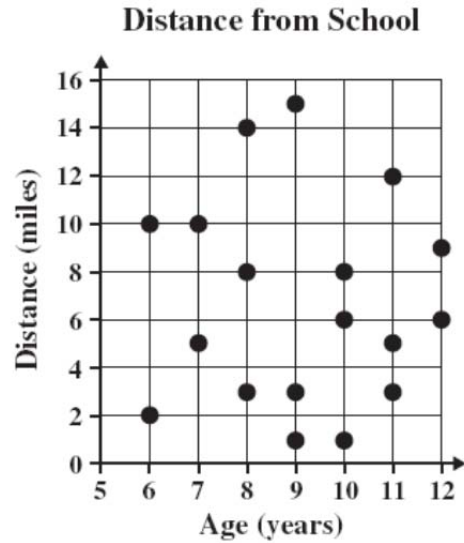
Which statement BEST describes the relationship between age and distance from school?

A As age increases, the distance from school increases.

B As age increases, the distance from school decreases.

C As age increases, the distance from school remains constant.

D There is no relationship between age and distance from school.

5. The number of games won over four years for three teams is shown on the graph below.
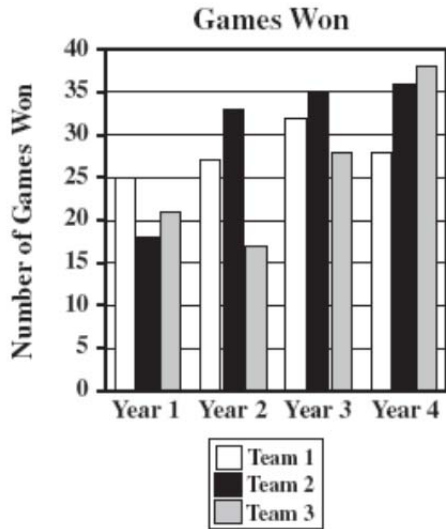
Games Won

Which statement is true based on this information?

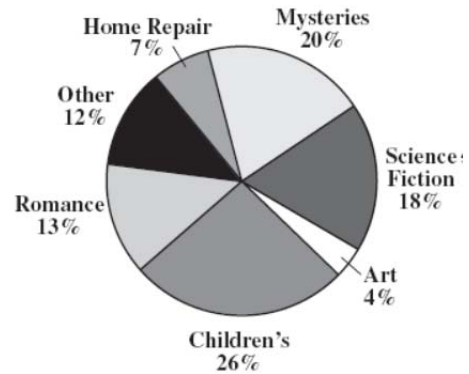**A** Team 3 always came in second.

B Team 1 had the best average overall.

C Team 1 always won more games than Team 3.

D Team 2 won more games each year than in the previous year.

6. The Smithsburg town library wanted to see what types of books were borrowed most often.

According to the circle graph shown above—

A more Children's books were borrowed Than Romance and Science Fiction combined.

B more than half of the books borrowed were Children's, Mysteries, and Art combined.

C more Mysteries were borrowed than Art and Science Fiction combined.

D more than half of the books borrowed were Romance, Mysteries, and Science Fiction Combined.

7. The table below shows the number of real estate transactions by type for a city.

Real Estate Transactions

Type of Property Sold	Number of Sales
Single-Family Residence	157
Condo/Townhouse	17
Mobile Home	6
Multi-Family	2
Commercial	15
Land	255
Total	**452**

Based on the information in the table, which statement is true?

A More than half of the sales were single-family residences.

B More sales occurred for land than in all other areas combined.

C The number of condo/townhouse sales was more than 10% of the total sales.

D The number of mobile home and multi-family sales combined was twice the number of commercial sales.

8. A student asked 50 children to choose between two colors. The results of the survey are shown in the table below.
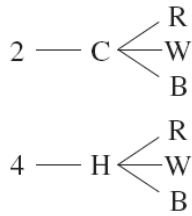
Color Survey

Color	Number
Pink	21
Purple	29

Based on the data in the table, the student claimed that purple is the favorite color of most children. Which reason BEST describes why this is an invalid claim?
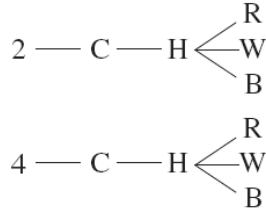
A Not all of the children chose purple.

B More of the children chose pink than purple.

C The total number of votes did not equal 50.

D The children were only given a choice of two colors.

9. Carmen wants to buy a new car. Her choices are a 2-door or a 4-door, a convertible top or a hard top, a red, white, or black. Which of the following tree diagrams represents all the possible choices for the car.
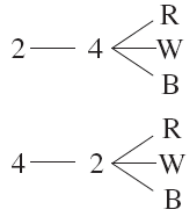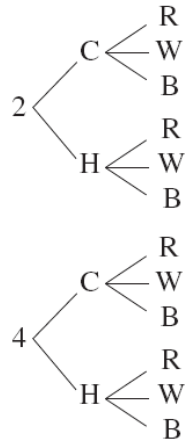
A

```
        R
2 — C <─W
        B
        R
4 — H <─W
        B
```

C

```
          R
2 — C — H <─W
          B
          R
4 — C — H <─W
          B
```

B

```
        R
2 — 4 <─W
        B
        R
4 — 2 <─W
        B
```

D

```
       R
    C <─W
       B
2
       R
    H <─W
       B

       R
    C <─W
       B
4
       R
    H <─W
       B
```

10. A restaurant is advertising 3-item combination specials that must include a main dish, a vegetable, and a drink.

Lunch Specials

Main Dish	Vegetable	Drink
Chicken	Broccoli	Water
Beef	Carrots	Soft drink
	Peas	Milk
	Corn	

How many 3-item combinations include Chicken and Broccoli?

**11.** Based on the bar graph shown below, which of the following conclusions is true?

Speed of Four Runners in a 100-Meter Dash
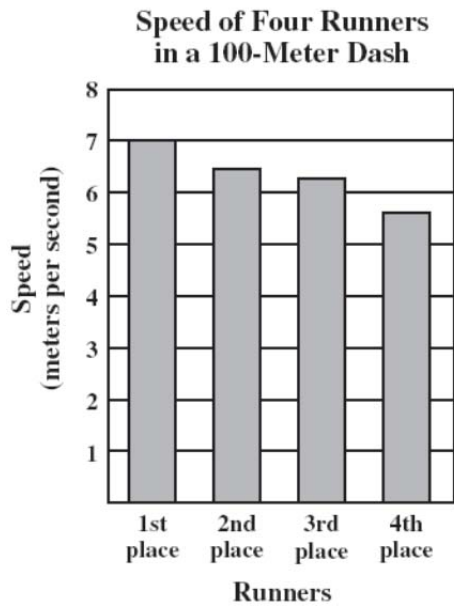
A Everyone ran faster than 6 meters per second.

B The best possible rate for the 100-meter dash is 5 meters per second.

C The first-place runner was four times as fast as the fourth-place runner.

D The second-place and third-place runners were closest in time to one another.

12. The graph below represents the closing price of a share of a certain stock for each day of a week.
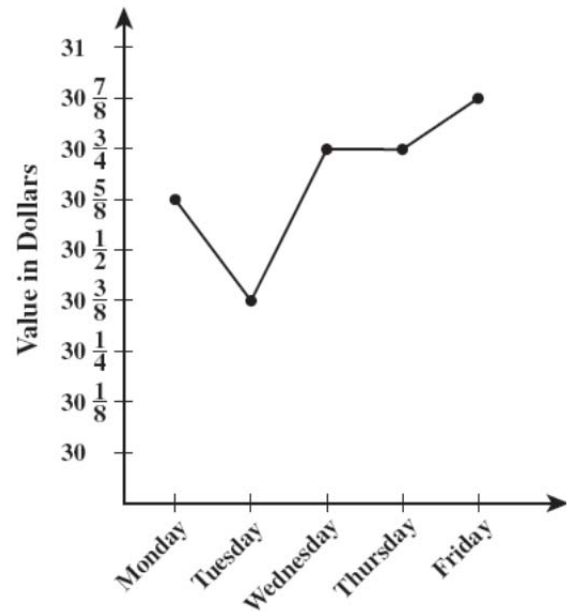
Which day had the no change in the value of the stock over that of the previous day?

A Tuesday

B Wednesday

C Thursday

D Friday

13. There are 13 red marbles, 17 blue marbles, and 19 green marbles in a bag. Jessica removed one red marble from the bag and did NOT put it back. She then randomly removed another marble. What is the probability that the second marble was red?

14. There are 9 cans of Coca Cola, 8 cans of Sprite, and 10 cans of Sunkist soda in a bucket of ice. If James first takes a can of Sprite, then what is the probability of Samantha randomly selecting a Sunkist?

15. Ken is shopping at the market for a quart of ice cream. In the freezer section there are 4 quarts of Rocky Road, 9 quarts of Cookies n' Cream, 4 quarts of Mint Chip, and 4 quarts of Vanilla. Ken takes a quart of Rocky Road, but immediately puts it back. What is the probability that Ken randomly selects a quart of Cookies n' Cream?
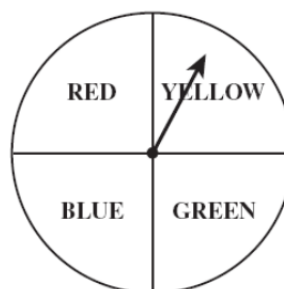
16. The spin board below is fair. Joshua and Melissa each take a chance flicking the spinner. If Joshua goes first and lands on red, what is the probability that Melissa will land on yellow.

17. Anna has the letter tiles below in a bag.

S T A T I S T I C S

She reached in the bag and pulled out a T. She then put the tile back in the bag. If Anna randomly selects a tile from the bag, what is the probability she will select a T again?

18. Mr. Gulati is holding seven cards numbered 1 through 7. He has asked seven students to each randomly pick a card to see who goes first in a game. Whoever picks the card numbered 6 goes first. Juanita picks first, gets the card numbered 2, and keeps the card. What is the probability that Yoko will get the card numbered 6 if she picks the second?

19. If a coin is flipped three times, what is the probability of getting two tails and one head.

First Coin	Second Coin	Third Coin
H	H	H
H	H	T
H	T	H
H	T	T
T	H	H
T	H	T
T	T	H
T	T	T

20. A die was rolled ten times and each time the outcome was a 5. If the die is rolled again, what is the probability that the outcome is a 2?
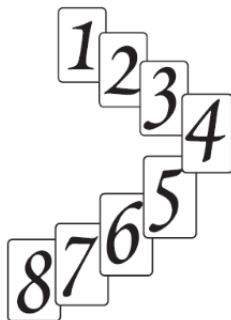
21. What is the probability of getting a tail when flipping a fair coin?

22. What is the probability of getting a one or six when rolling a fair die?

23. What is the probability of rolling an even for a fair die?

24. What is the probability of rolling a 2, 3, 4, 5, or 6 for a fair die.

25. These 8 cards are placed face down and shuffled.

1 2 3 4 5 6 7 8

If Beatrice turns over only one card, what is the probability she will get a card with a number less than 3?

26. Fran has 22 CD's in a box: 8 country, 7 rock, 4 dance, and 3 classical. If she takes out one CD without looking, what is the probability that she will pick a country or classical CD?

27. A bucket contains 5 bottles of apple juice, 7 bottles of orange juice, and 8 bottles of water. If Kira randomly selects a bottle, what is the probability that she will select a drink other than orange or apple juice?

28. The spinner shown below is fair. What is the probability that the spinner will NOT stop on red if you spin it one time?
State the probability as a percentage.
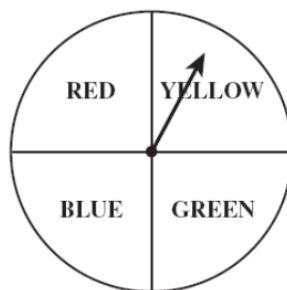
29. What is the probability of not rolling a Four or six for a fair die?

30. Ken's first four paychecks for his job were $247, $49, $189 and $127.
What is the mean?
Note: Mean means average.

31. The data below shows the number of points scored by the Clippers in the past six games.

| 68, 97, 90, 105, 121, 101 |

What is the median price?
Note: Median means middle.

32. A list of the number of trips the space shuttle has taken to the moon each year for the past ten years is shown below. What is the mode of the list?

| 1, 4, 7, 5, 3, 1, 2, 3, 2, 1 |

Note: Mode means most.

Answer Key:

1) D 2) B 3) A 4) D 5) D 6) D 7) B 8) D 9) D 10) 3 11) D 12) C 13) $\frac{1}{4}$

14) $\frac{5}{13}$ 15) $\frac{3}{7}$ 16) $\frac{1}{4}$ 17) $\frac{3}{10}$ 18) $\frac{1}{6}$ 19) $\frac{3}{8}$ 20) $\frac{1}{6}$ 21) $\frac{1}{2}$ 22) $\frac{1}{3}$ 23) $\frac{1}{2}$

24) $\frac{5}{6}$ 25) $\frac{1}{4}$ 26) $\frac{1}{2}$ 27) $\frac{2}{5}$ 28) 75% 29) $\frac{2}{3}$ 30) $153 31) 99 32) 1