CAHSEE REVIEW

name _____

period _____

1 What is the value of y in the equation
$3y + 2(3 - 2y) = 0$?

A -6

B $-\dfrac{6}{5}$

C $\dfrac{5}{6}$

D 6

2 Which of the following is the solution to the inequality $2(3x - 4) - 3(x + 1) > 4$?

F $x > \dfrac{7}{3}$

G $x > 3$

H $x > 5$

J $x < -5$

3 Which equation is equivalent to $5(x - 4) = 8$?

A $5x = 12$

B $5x = 28$

C $5x = -12$

D $5x = -28$

4 What is the solution to the following system of equations?

$$\begin{cases} 3y + x = 9 \\ 3y - 4x = -6 \end{cases}$$

F $(-3, -2)$

G $(-2, -3)$

H $(2, 3)$

J $(3, 2)$

5 $(6x - 5)(2x + 2) =$

A $12x^2 + 2x - 10$

B $12x^2 - 2x - 10$

C $12x^2 + 22x + 10$

D $12x^2 - 22x + 10$

6 A pet store has a total of 35 dogs, cats, and rabbits. The number of rabbits is 1 more than the number of dogs, and there are 3 fewer rabbits than cats. How many cats are in the pet store?

F   10

G   11

H   12

J   14

7. What is the slope of a line parallel to the graph of $y = \frac{2}{3}x - 4$?

F -4

G $-\frac{3}{2}$

H $\frac{2}{3}$

J $\frac{1}{4}$

9. In a summer job, Silas mowed an average of 4 lawns daily over a 15-day period. In the first 4 days, he mowed 24 lawns. How many lawns did he mow in the remaining 11 days?

A 16

B 28

C 36

D 44

8. Which expression is equivalent to $\frac{4a^4}{8a^9}$?

A $\frac{1}{2a^5}$

B $\frac{a^5}{2}$

C $\frac{a^{13}}{2}$

D $\frac{2}{a^{13}}$

10. If the fraction $\frac{x^2 - 4x + 4}{x^3 - 4x}$ is simplified completely, what will be the final expression?

A $\frac{4}{x}$

B $\frac{x}{x^2 - 4}$

C $\frac{x^2 + 4}{x^3}$

D $\frac{x - 2}{x^2 + 2x}$

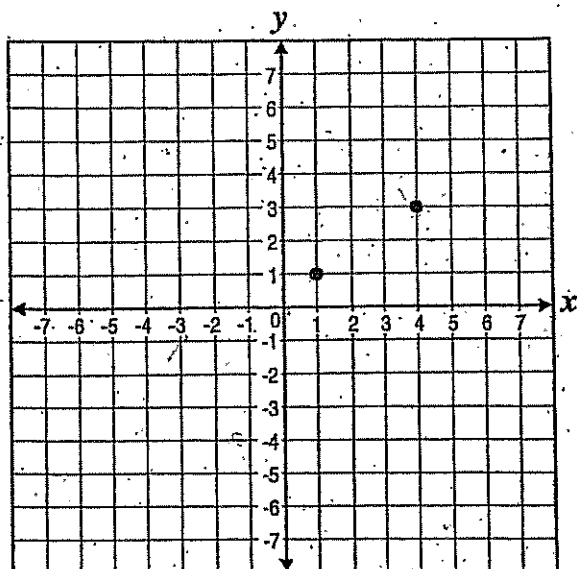**11.** Which rational expression is equivalent to $\frac{2a^2bc^3}{6a^3bc^2}$?

F $\frac{c}{3a}$

G $\frac{1}{3a}$

H $\frac{c}{3}$

J $\frac{3c}{a}$

What is the equation for the line passing through the points graphed below?

A $\quad y = -\dfrac{2}{3}x + \dfrac{5}{3}$

B $\quad y = \dfrac{2}{3}x + \dfrac{1}{3}$

C $\quad y = \dfrac{2}{3}x - \dfrac{1}{3}$

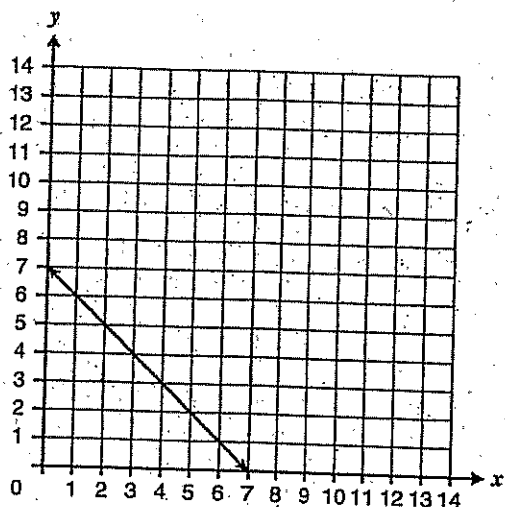D $\quad y = \dfrac{3}{2}x - \dfrac{1}{2}$

Two contractors were working together to finish concrete. One can finish 25 square yards in 4 hours, and the other can finish 25 square yards in 5 hours. How much concrete can they finish in 8 hours working together?

A   50 square yards

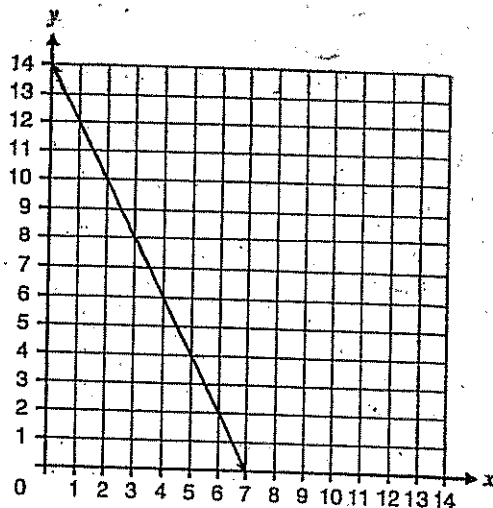B   90 square yards

C   100 square yards

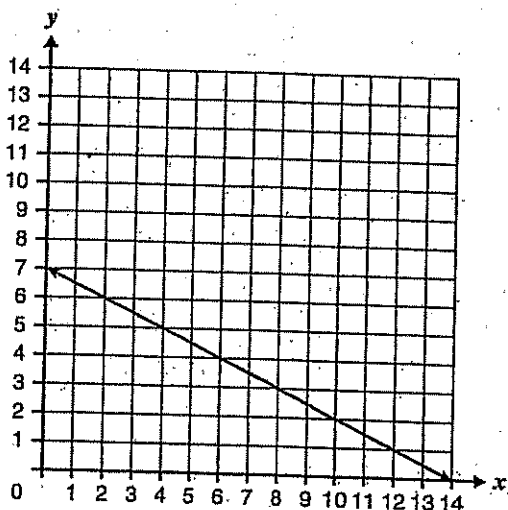D   111 square yards
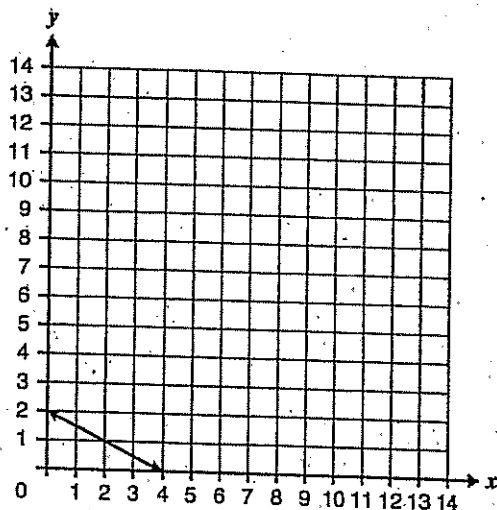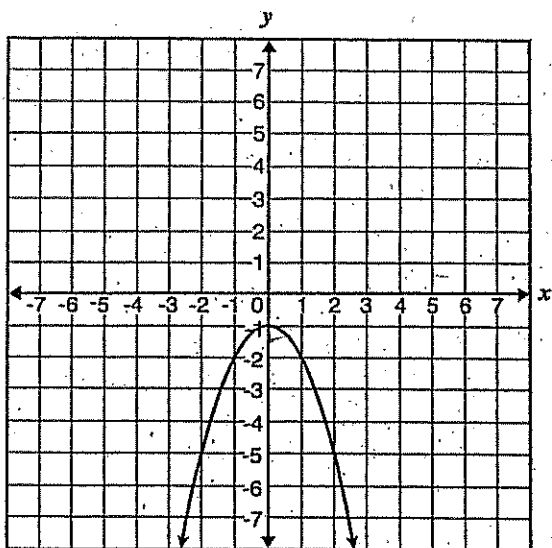
14 Which graph represents $2x + 4y = 28$

F

H

G

J

15 Which graph represents the equation $y = -x^2 - 1$?

F

H

G

J
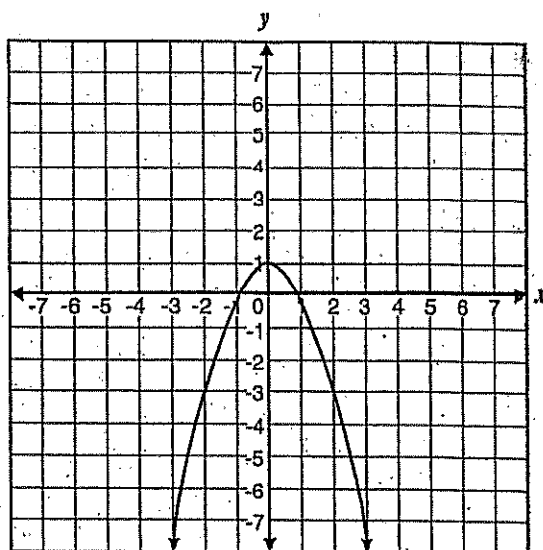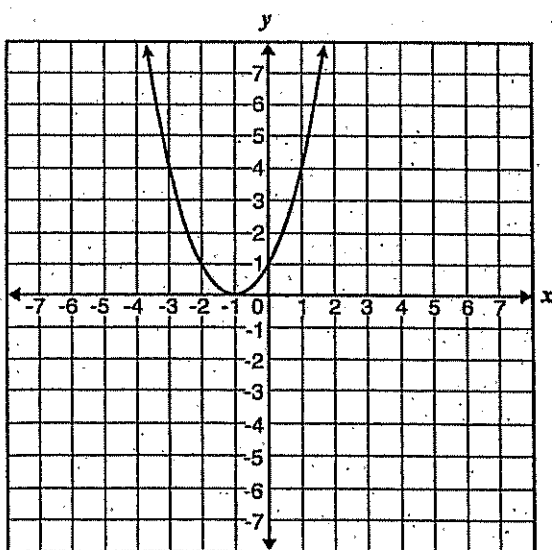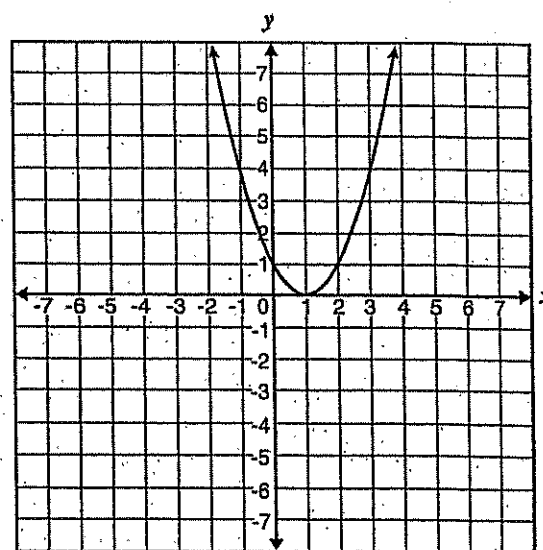
39. Donald priced six personal Compact Disc (CD) players. The prices are shown below.

$21.00, $23.00, $21.00, $39.00, $25.00, $31.00

What is the median price?

A $21.00

B $24.00

C $27.00

D $30.00

40. Rico's first three test scores in biology were 65, 90, and 73. What was his mean score?

A 65

B 73

C 76

D 90

41. The box below shows the number of kilowatt-hours of electricity used last month at each of the houses on Harris Street.
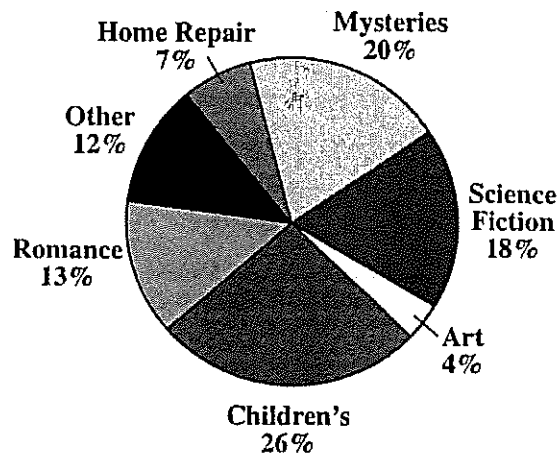
620, 570, 570, 590, 560, 640, 590, 590, 580

What is the mode of these data?

A 560

B 580

C 590

D 640

42. The Smithburg town library wanted to see what types of books were borrowed most often.

Home Repair 7%
Mysteries 20%
Other 12%
Science Fiction 18%
Romance 13%
Art 4%
Children's 26%

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.

43. Three-fourths of the 36 members of a club attended a meeting. Ten of those attending the meeting were female. Which one of the following questions can be answered with the information given?

    A   How many males are in the club?

    B   How many females are in the club?

    C   How many male members of the club attended the meeting?

    D   How many female members of the club did not attend the meeting?

    M00261

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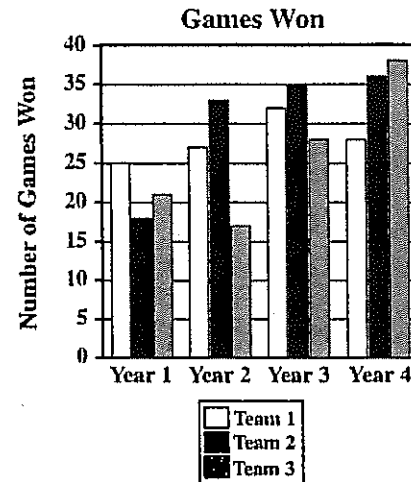
Games Won

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.

    M10300

45. 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.

M21303

46. 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 of the 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.

M12759

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47. To get home from work, Curtis must get on one of the three highways that leave the city. He then has a choice of four different roads that lead to his house. In the diagram below, each letter represents a highway, and each number represents a road.

Highway

	A	B	C
1	A 1	B 1	C 1
2	A 2	B 2	C 2
3	A 3	B 3	C 3
4	A 4	B 4	C 4

Road

If Curtis randomly chooses a route to travel home, what is the probability that he will travel Highway B and Road 4?

A $\dfrac{1}{16}$

B $\dfrac{1}{12}$

C $\dfrac{1}{4}$

D $\dfrac{1}{3}$

M02512

48. The table below shows all of the possible outcomes when flipping three fair coins at the same time.

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

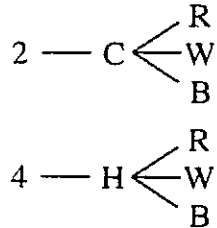**Which of the following statements must be true?**

A The probability that exactly two coins have the same outcome is $\dfrac{1}{2}$.

B The probability of getting exactly one tail is higher than getting exactly two tails.

C The probability of getting at least one head is higher than the probability of getting at least one tail.

D The probability that all of the coins will land on heads is the same as the probability that all of the coins will land on tails.
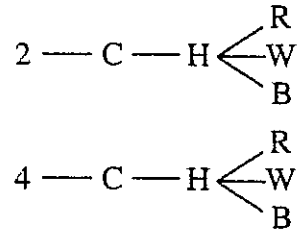
M0320

Statistics, Data Analysis, and Probability

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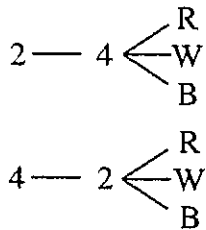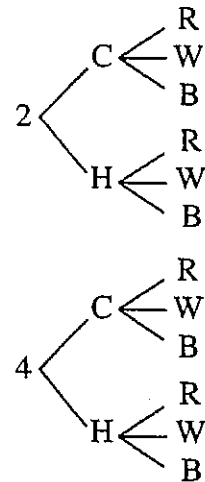
A

$$
2 - C \Big\langle {\substack{R \\ W \\ B}}
$$

$$
4 - H \Big\langle {\substack{R \\ W \\ B}}
$$

C

$$
2 - C - H \Big\langle {\substack{R \\ W \\ B}}
$$

$$
4 - C - H \Big\langle {\substack{R \\ W \\ B}}
$$

B

$$
2 - 4 \Big\langle {\substack{R \\ W \\ B}}
$$

$$
4 - 2 \Big\langle {\substack{R \\ W \\ B}}
$$

D

MH040A

50. 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 a soft drink and corn?

A 2

B 3

C 4

D 8

52. The spinner shown above is fair. What is the probability that the spinner will NOT stop on red if you spin it one time?

A $\frac{1}{4}$

B $\frac{1}{3}$

C $\frac{3}{4}$

D $\frac{4}{3}$

51. A bucket contains 3 bottles of apple juice, 2 bottles of orange juice, 6 bottles of tomato juice, and 8 bottles of water. If Kira randomly selects a bottle, what is the probability that she will select a drink other than water?

A $\frac{3}{4}$

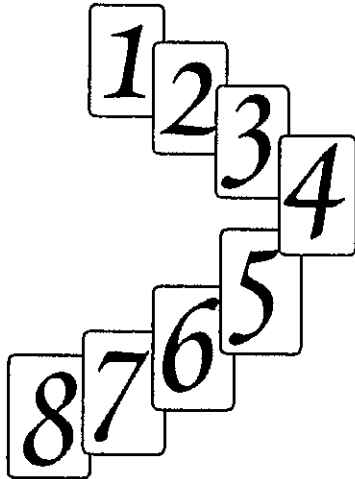B $\frac{11}{19}$

C $\frac{8}{19}$

D $\frac{1}{4}$

53. Fran has 16 CDs in a box: 6 country, 6 rock, 2 dance, and 2 classical. If she takes out one CD without looking, what is the probability that she will pick a rock or country CD?

A 25%

B 50%

C 75%

D 100%

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

If Beatrice turns over only one card, what is the probability she will get a card with a number less than 4?

A $\dfrac{1}{4}$

B $\dfrac{3}{8}$

C $\dfrac{1}{2}$

D $\dfrac{5}{8}$

55. Leander has 4 blue, 3 black, and 5 red ties on his rack. If he randomly selects a tie, what is the probability that he will select a tie that is NOT red?

A $\dfrac{2}{7}$

B $\dfrac{5}{12}$

C $\dfrac{7}{12}$

D $\dfrac{5}{7}$

56. Mr. Gulati is holding five cards numbered 1 through 5. He has asked five students to each randomly pick a card to see who goes first in a game. Whoever picks the card numbered 5 goes first. Juanita picks first, gets the card numbered 4, and keeps the card. What is the probability that Yoko will get the card numbered 5 if she picks second?

A $\dfrac{1}{2}$

B $\dfrac{1}{3}$

C $\dfrac{1}{4}$

D $\dfrac{1}{5}$

57. A bag contained four green balls, three red balls, and two purple balls. Jason removed one purple ball from the bag and did NOT put the ball back in the bag. He then randomly removed another ball from the bag. What is the probability that the second ball Jason removed was purple?

A $\dfrac{1}{36}$
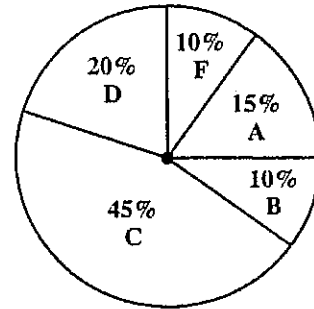
B $\dfrac{1}{9}$

C $\dfrac{1}{8}$

D $\dfrac{2}{9}$

58. 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 an S. 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 an S again?

A $\dfrac{1}{5}$

B $\dfrac{2}{9}$

C $\dfrac{3}{10}$

D $\dfrac{1}{3}$

59. The circle graph shown above represents the distribution of the grades of 40 students in a certain geometry class. How many students received As or Bs?

A 6

B 10

C 15

D 20

Statistics, Data Analysis, and Probability

Speed of Four Runners in a 100-Meter Dash
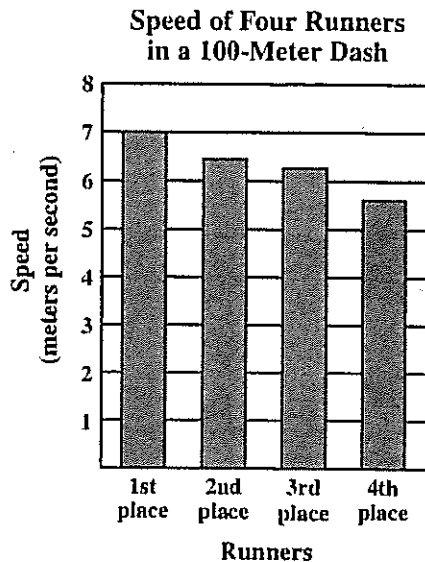
60. Based on the bar graph shown above, which of the following conclusions is true?

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.

M00279

61. The graph below represents the closing price of a share of a certain stock for each day of a week.
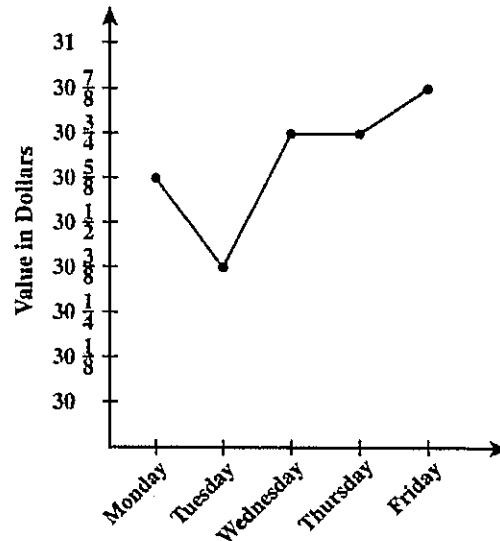
Which day had the greatest increase in the value of this stock over that of the previous day?

A Tuesday

B Wednesday

C Thursday

D Friday

M00295

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62. The students at a high school were asked to name their favorite type of art. The table below shows the results of the survey.

Art Survey

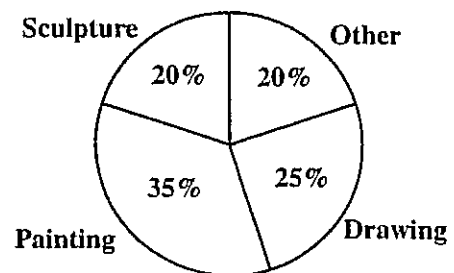| Type of Art	Number of Students
Painting	714
Drawing	709
Sculpture	296
Other	305

Which circle graph BEST shows these data?
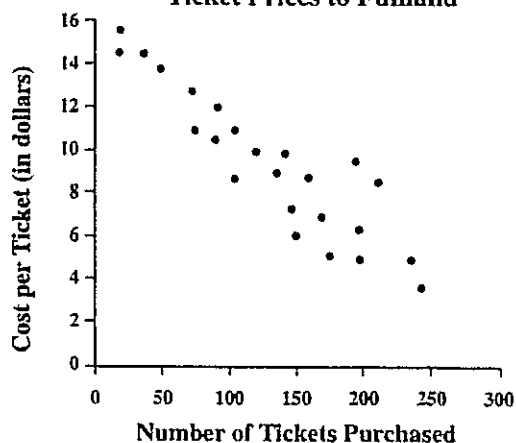
A

B

C

D

M41995.3
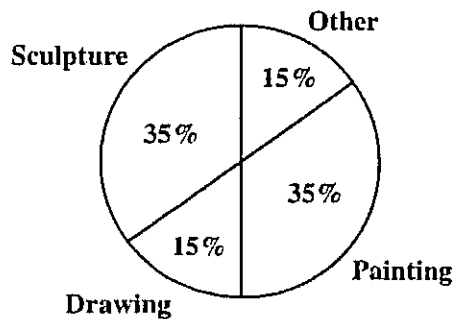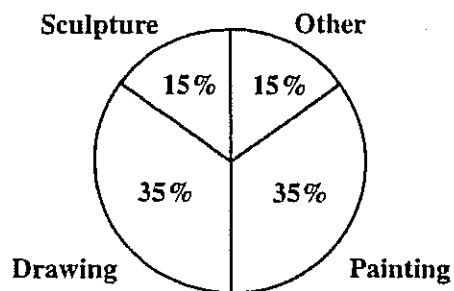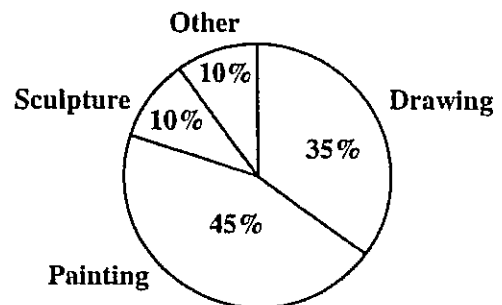
63. The Venn diagram below shows the number of girls on the soccer and track teams at a high school.
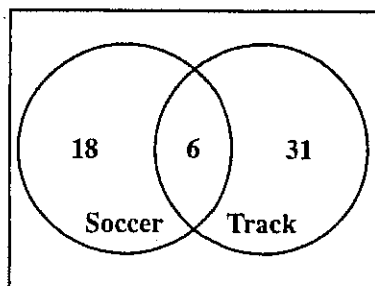
How many girls are on both the soccer and track teams?

A   6

B   12

C   49

D   55

Ticket Prices to Funland

64. The cost of a ticket to Funland varies according to the season. Which of the following conclusions about the number of tickets purchased and the cost per ticket is BEST supported by the scatterplot above?

A   The cost per ticket increases as the number of tickets purchased increases.

B   The cost per ticket is unchanged as the number of tickets purchased increases.

C   The cost per ticket decreases as the number of tickets purchased increases.

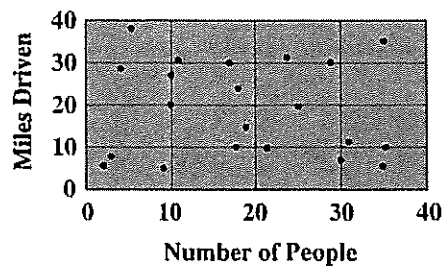D   There is no relationship between the cost per ticket and the number of tickets purchased.

65. Which scatterplot shows a negative correlation?

A

Number of Students

C

Number of People

B

Number of People

D

Number of Minutes

MI0254b
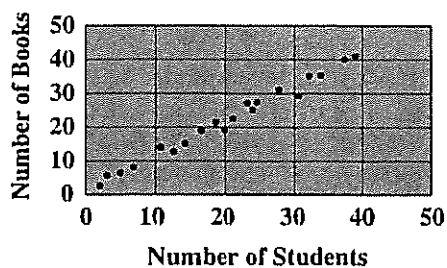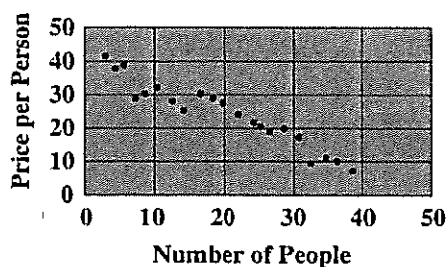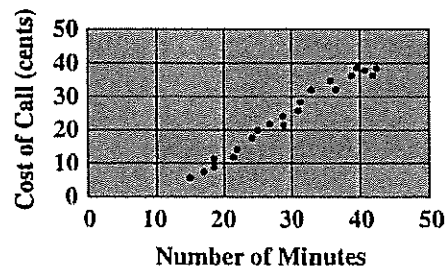
66. The scatterplot below shows the time cheese has been aging and the amount of lactic acid present in the cheese.

Lactic Acid in Cheese

Age of Cheese
(days)
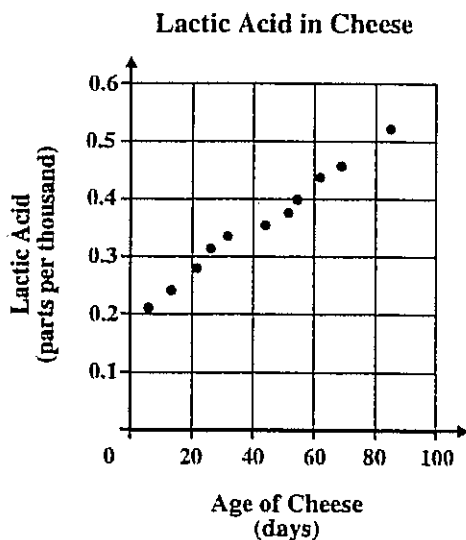
Which statement is MOST strongly supported by the scatterplot?

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.

M22077

67. The scatterplot below shows the ages of some children and the distance each child lives from school.

Distance from School

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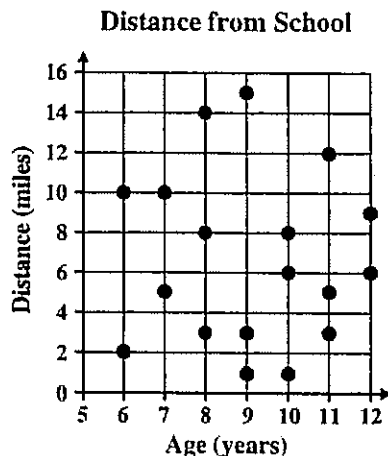
Which statement BEST describes the relationship between age and distance from school?

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.

M10365

— 23 —

Statistics, Data Analysis, and Probability

68. The number of classic books Nanette sells in her bookshop varies according to the time of year, as shown in the scatterplot below.
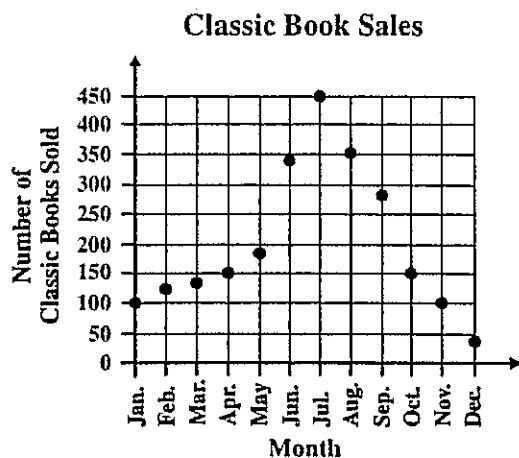
Classic Book Sales

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.

M21969

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