1

Sixty-eight people are sitting in 20 cars and each car contains at most 4 people. What is the maximum possible number of cars that could contain exactly 1 of the 68 people?

- 2
- 3
- 4
- 8
- 12

@C

2

If n is any prime number greater than 2, which of the following CANNOT be a prime number?

- $n - 4$
- $n - 3$
- $n - 1$
- $n + 2$
- $n + 5$

@E

3

In 1988 Mr. Smith's annual income was greater than Mrs. Smith's annual income. In 1989 Mr. Smith's annual income decreased by p percent, whereas Mrs. Smith's annual income increased by p percent. ($p > 0$)

Column A	Column B
Mr. and Mrs. Smith's combined annual income in 1988	Mr. and Mrs. Smith's combined annual income in 1989

@A

4

How many integers between 101 and 201 are equal to the square of some integer?

- Two
- Three
- Four
- Five
- Six

@C

5

The price of a certain stock was $12\frac{1}{2}$ dollars per share.

The price increased x percent to $15\frac{5}{8}$ dollars per share.

Column A	Column B
x	20

@A

The "reflection" of a positive integer is obtained by reversing its digits. For example, 321 is the reflection of 123. The difference between a five-digit integer and its reflection must be divisible by which of the following?

- 2
- 4
- 5
- 6
- 9

6

@E

Column A	Column B
$\frac{1}{1 - 0.03}$	1.03

7

@A

The original value of machine X is V dollars, while the original value of machine Y is $2V$ dollars. Both machines depreciate in value at a constant rate of 10 percent of their original value per year.

Column A	Column B
The value of machine X after 3 years	The value of machine Y after 6 years

8

@B

If n is an odd integer, which of the following is the square of the next larger odd integer?

- $n^2 + 1$
- $n^2 + 4$
- $n^2 + 2n + 1$
- $n^2 + 4n + 4$
- $n^2 + n + 1$

9

@D

If 55 percent of a group of people have brown hair and 80 percent of the same group do not have red hair, what fraction of those who do not have brown hair have red hair?

- ⬭ $\frac{1}{4}$
- ⬭ $\frac{4}{11}$
- ⬭ $\frac{4}{9}$
- ⬭ $\frac{5}{9}$
- ⬭ $\frac{4}{5}$

10

@C

$$n = \frac{k + \frac{r}{s}}{\frac{t}{v}}$$

In the equation above, k, r, s, t, and v represent positive numbers. Multiplying which one of these numbers by 2 will reduce the value of n to $\frac{1}{2}$ of its present value?

- ⬭ k
- ⬭ r
- ⬭ s
- ⬭ t
- ⬭ v

11

@D

A certain money market account that had a balance of $48,000 during all of last month earned $360 in interest for the month. At what simple annual interest rate did the account earn interest last month?

- ⬭ 7%
- ⬭ 7.5%
- ⬭ 8%
- ⬭ 8.5%
- ⬭ 9%

12

@E

Column A	Column B
The two-digit integer that equals twice the sum of its digits	16

13

@A

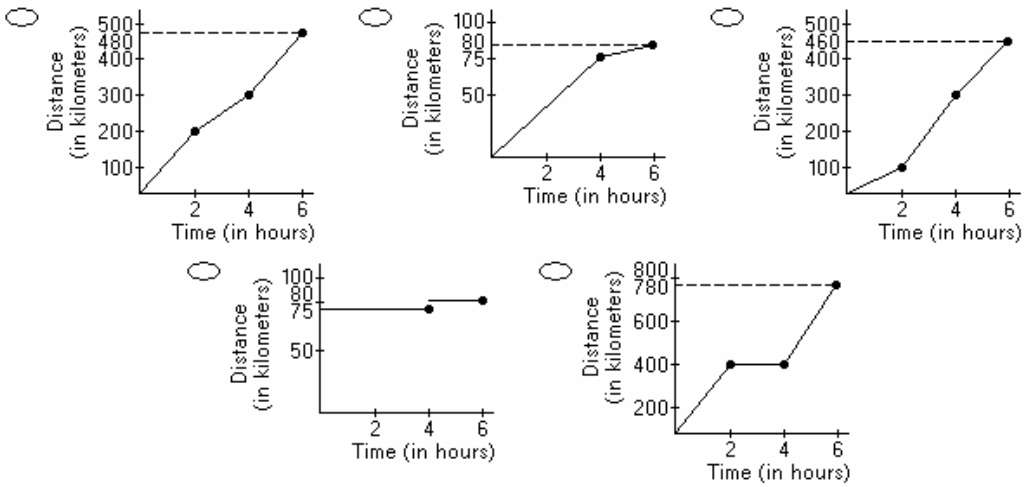
When the even integer n is divided by 7, the remainder is 3.

Column A	Column B
The remainder when n is divided by 14	10

14

@C

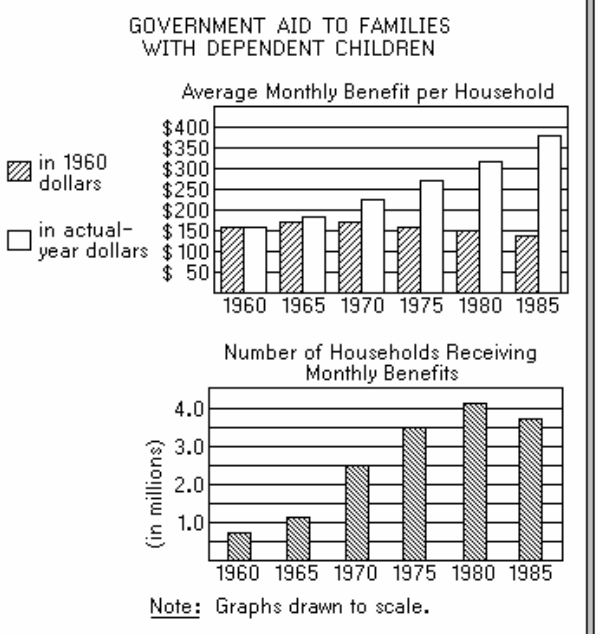
A car travels at an average speed of 80 kilometers per hour during a 6-hour trip and averages 75 kilometers per hour for the first 4 hours of the trip. Which of the following distance-*versus*-time graphs is consistent with this information?



15

@A

These questions refer to the following graphs.



The number of households receiving monthly benefits in 1960 was approximately what fraction of the number receiving monthly benefits in 1975 ?

- $\frac{9}{10}$
- $\frac{5}{6}$
- $\frac{16}{27}$
- $\frac{11}{32}$
- $\frac{8}{35}$

16

@E

The “combined age” of a group of people is the sum of the ages of all of the people in the group. Which of the following groups had the greatest combined age in 1986 ?

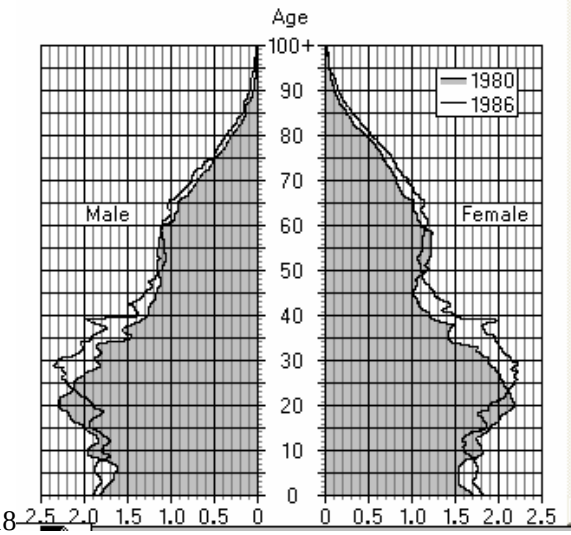
- 20-year-old males
- 20-year-old females
- 60-year-old males
- 60-year-old females
- 80-year-old females

17

@D

These questions refer to the following graphs, which are drawn to scale. Ages are in whole years completed by December 31.

DISTRIBUTION OF THE UNITED STATES POPULATION BY AGE AND SEX, 1980 AND 1986



Approximately how many more 10-year-old children were there in 1980 than in 1986 ?

- 100,000
- 200,000
- 300,000
- 400,000
- 1,000,000

18

@D

The population of females was greater in 1980 than in 1986 for approximately what percent of the ages from 0 to 100 years?

- ⬭ 15%
- ⬭ 25%
- ⬭ 55%
- ⬭ 75%
- ⬭ 85%

19

@B

In 1980 the ratio of the number of males to the number of females was greatest for which of the following ages?

不用算仔细，通过图形预估算，与ratio=1参考比较

- ⬭ 10
- ⬭ 30
- ⬭ 50
- ⬭ 70
- ⬭ 90

20

@A

$\lfloor x \rfloor$ represents the greatest integer less than or equal to x and $\lceil x \rceil$ represents the least integer greater than or equal to x.

Column A	Column B
$\frac{\lfloor 1.4 \rfloor + \lceil 1.4 \rceil}{2}$	1.4

21

@A

These questions refer to the following table.

APPARENT FAHRENHEIT TEMPERATURES
DUE TO WIND-CHILL FACTOR
(corresponding to actual temperatures and wind speeds)

WIND SPEEDS (miles per hour)	ACTUAL TEMPERATURES (degrees Fahrenheit)				
	-10	0	10	20	30
5	-15	-5	7	16	27
10	-34	-22	-9	3	16
15	-45	-31	-18	-5	9
20	-53	-39	-24	-10	4
25	-59	-44	-29	-15	1
30	-64	-49	-33	-18	-2
35	-67	-52	-35	-20	-4
40	-69	-53	-37	-21	-5

If the actual temperature is 13 degrees Fahrenheit and the wind speed is 14 miles per hour, then the apparent temperature could be

- ⬭ 5 degrees Fahrenheit
- ⬭ −12 degrees Fahrenheit
- ⬭ −20 degrees Fahrenheit
- ⬭ −25 degrees Fahrenheit
- ⬭ −32 degrees Fahrenheit

22

@B

These questions refer to the following table.

APPARENT FAHRENHEIT TEMPERATURES
DUE TO WIND-CHILL FACTOR
(corresponding to actual temperatures and wind speeds)

WIND SPEEDS (miles per hour)	ACTUAL TEMPERATURES (degrees Fahrenheit)				
	-10	0	10	20	30
5	-15	-5	7	16	27
10	-34	-22	-9	3	16
15	-45	-31	-18	-5	9
20	-53	-39	-24	-10	4
25	-59	-44	-29	-15	1
30	-64	-49	-33	-18	-2
35	-67	-52	-35	-20	-4
40	-69	-53	-37	-21	-5

Which of the following can be inferred from the table?

I. The apparent temperature for an actual temperature of 20 degrees Fahrenheit and a wind speed of 15 miles per hour is the same as that for an actual temperature of 30 degrees Fahrenheit and a wind speed of 40 miles per hour.
II. At a constant wind speed, as the actual temperature increases, the difference between the actual and the apparent temperatures also increases.
III. At a constant actual temperature of −10 degrees Fahrenheit, the apparent temperature decreases at a constant rate as the wind speed increases.

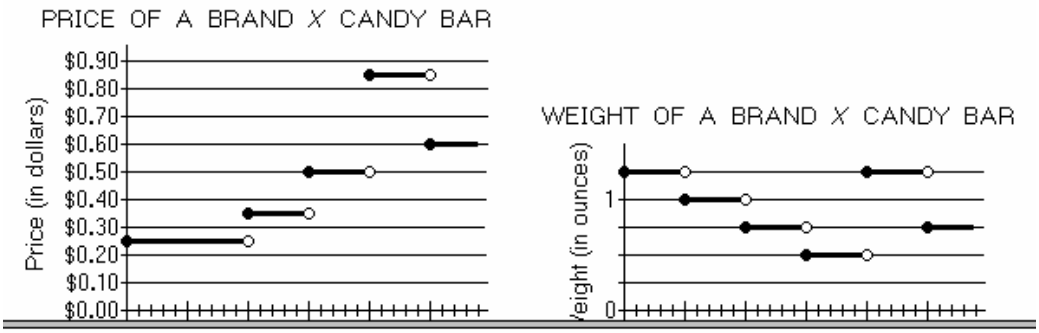
⬭ I only ⬭ II only ⬭ I and III only

⬭ II and III only ⬭ I, II, and III

23

@A

These questions refer to the following graphs, which are drawn to scale. An open dot means the point is not included.



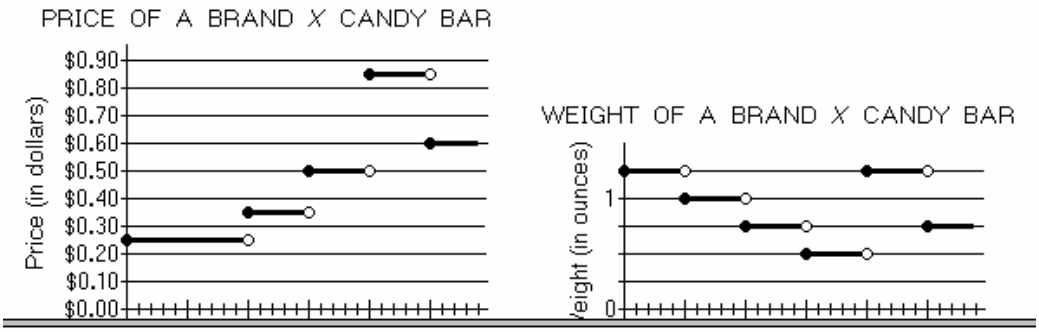
From 1982 to 1987 the price of a Brand *X* candy bar increased by approximately what percent?

⬭ 40%
⬭ 50%
⬭ 70%
⬭ 150%
⬭ 250%

24

@C

These questions refer to the following graphs, which are drawn to scale. An open dot means the point is not included.



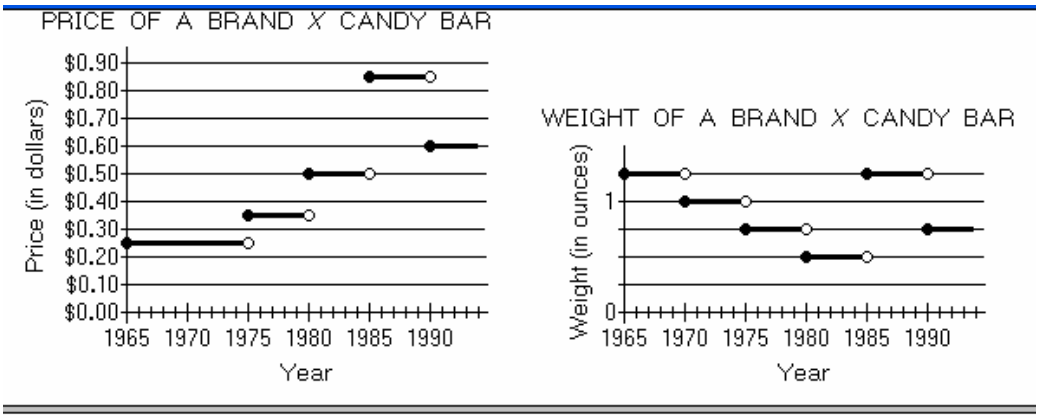
How many times between 1971 and 1991 did the price of a Brand X candy bar increase while the weight decreased?

how many times 这里是问多少次，而不是问倍数

- One
- Two
- Three
- Four
- Five

25

@B



How many times between 1971 and 1991 did the price of a Brand X candy bar increase while the weight decreased?

- One
- Two
- Three
- Four
- Five

26

@B

Of the 500 delegates attending a convention, 200 are Republicans and the rest are Democrats. One hundred of the delegates are vegetarians and, of those who are not vegetarians, 270 are Democrats. How many of the vegetarian delegates are Republicans?

- ⬭ 30
- ⬭ 40
- ⬭ 50
- ⬭ 60
- ⬭ 70

27

@E

$\mathcal{S}$ is a set of n consecutive integers.

Column A	Column B
The mean of $\mathcal{S}$	The median of $\mathcal{S}$

28

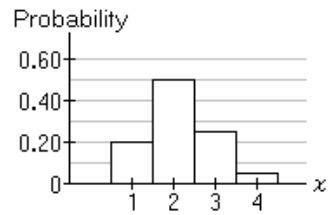
@C

An airline must charge an 11 percent tax on the price of an airline ticket. The airline wishes to charge the whole-dollar amount of $433.00 for the ticket, including the tax. What price, to the nearest $0.01, should the airline set for the ticket before the tax is added?

- ⬭ $385.37
- ⬭ $389.70
- ⬭ $390.09
- ⬭ $393.64
- ⬭ $422.00

29

@C



Note: Drawn to scale.

From the probability histogram, what is the probability that x is either 1 or 2 ?

- ⬭ 0.35
- ⬭ 0.45
- ⬭ 0.50
- ⬭ 0.70
- ⬭ 0.75

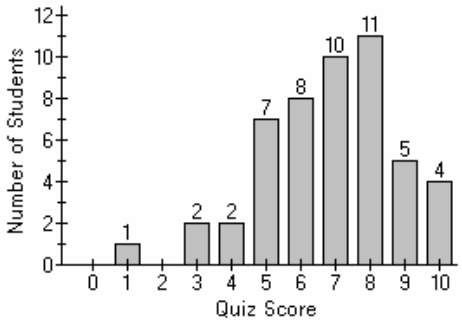
30

@D

31

These questions refer to the following information.

DISTRIBUTION OF QUIZ SCORES FOR 50 STUDENTS



The average (arithmetic mean) quiz score is closest to which of the following?

- 5
- 6
- 7
- 8
- 9

@C

32

From the set of 6 letters A, B, C, D, E, and F, there are 20 different 3-letter subsets that could be selected.

Column A	Column B
The number of 3-letter subsets that include the letter F	10

@C

33

These questions refer to the following information.

Thirty hospital patients who had been treated for the same illness were given a new treatment in a research study. They were then asked to evaluate whether five symptoms, *H*, *L*, *P*, *T*, and *V*, were made better or worse by the new treatment compared to the old treatment. For each symptom, each patient used one of five ratings:

2: much better
1: somewhat better
0: neither better nor worse
−1: somewhat worse
−2: much worse

For each symptom, the sum and standard deviation of the ratings are listed below.

RATINGS FOR SYMPTOM *H*

Rating	2	1	0	−1	−2
Number of Patients	7	12	*r*	*s*	*t*

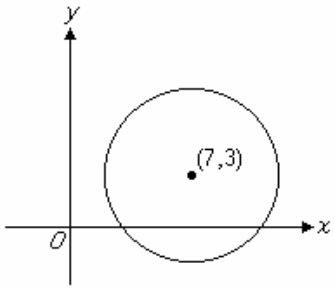
In the Ratings for Symptom *H* table shown, which of the following could be *r*, *s*, and *t*, respectively?

- 0, 7, 6
- 1, 1, 9
- 1, 10, 4
- 2, 19, 0
- 2, 4, 5

For each symptom, the sum and standard deviation of the ratings are listed below.

Symptom	Sum of 30 Ratings	Standard Deviation of 30 Ratings
H	12	1.40
L	35	0.69
P	−33	0.79
T	−26	0.43
V	2	0.89

@E



If (7, 3) is the center of the circle, then the radius of the circle could be equal to which of the following?

- 2
- 3
- 5
- 7
- 9

34

@C

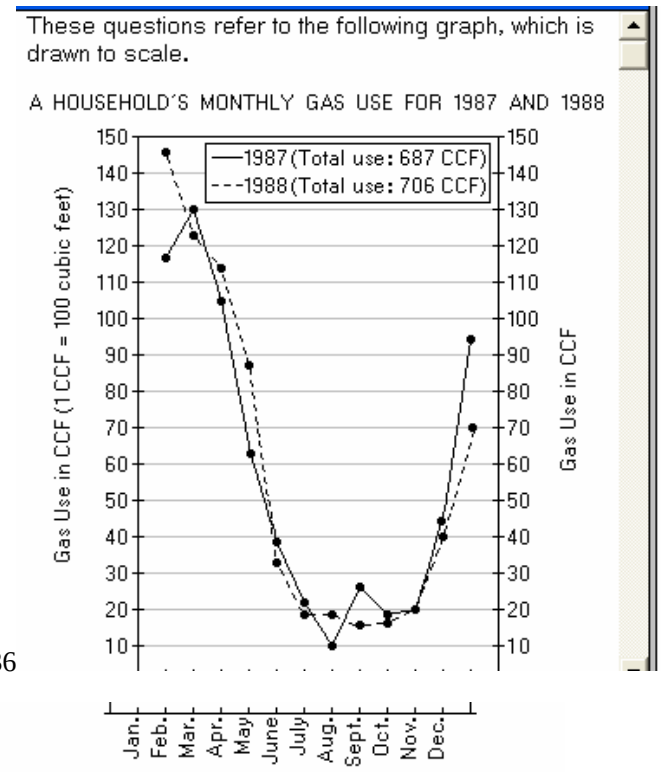
If $x + 2y = 2$ and $(x + y)^2 = 9$, which of the following is a possible value of y ?

- -8
- -5
- $-\frac{3}{2}$
- $\frac{3}{2}$
- 5

35

@E

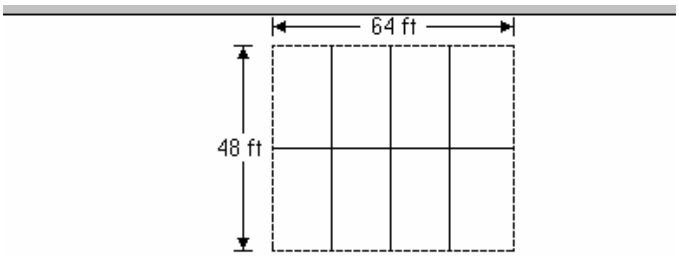
36



In what month was gas use in one of the years nearly double that for the same month in the other year?

- February
- July
- August
- September
- October

@B



The figure represents a rectangular level plot of land, subdivided into identical rectangular gardens.

Column A	Column B
The total number of feet of fencing, indicated by the solid lines, needed to separate each of the gardens	The total number of feet in the perimeter of the plot

37

@B

The curvature of a circle is defined to be the reciprocal of the radius of the circle.

Column A	Column B
The curvature of a circle with circumference 35π	The curvature of a circle with circumference 36π

38

@A

The length of a rectangular box is 4 inches longer than the depth, and the width of the box is 1 inch less than the length. The depth of the box is between 2 inches and 4 inches.

Column A	Column B
The volume of the box in cubic inches	200

39

@D

If n is an integer and $99 < n^2 < 200$, then n could have at most how many values?

注意： integer包括了positive integer 和 negative integer

- Two
- Four
- Six
- Eight
- Ten

40

@E

41

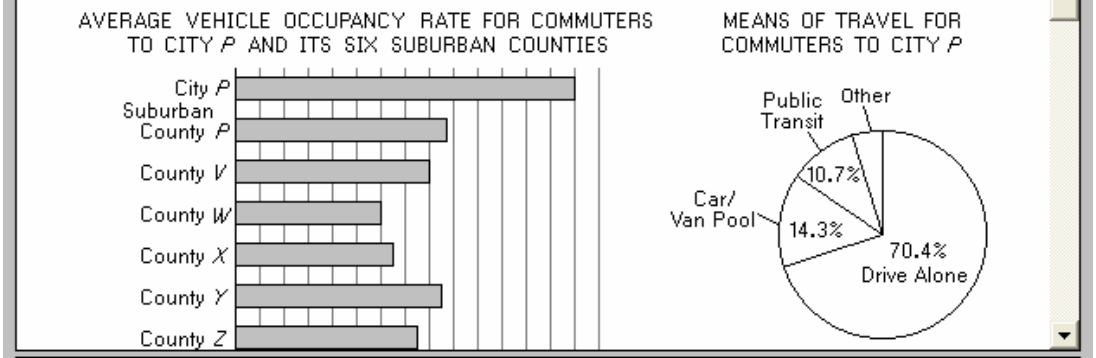
If one number is chosen at random from the first 1,000 positive integers, what is the probability that the number chosen is a multiple of both 2 and 8 ?

- $\frac{1}{125}$
- $\frac{1}{8}$
- $\frac{1}{2}$
- $\frac{9}{16}$
- $\frac{5}{8}$

@B

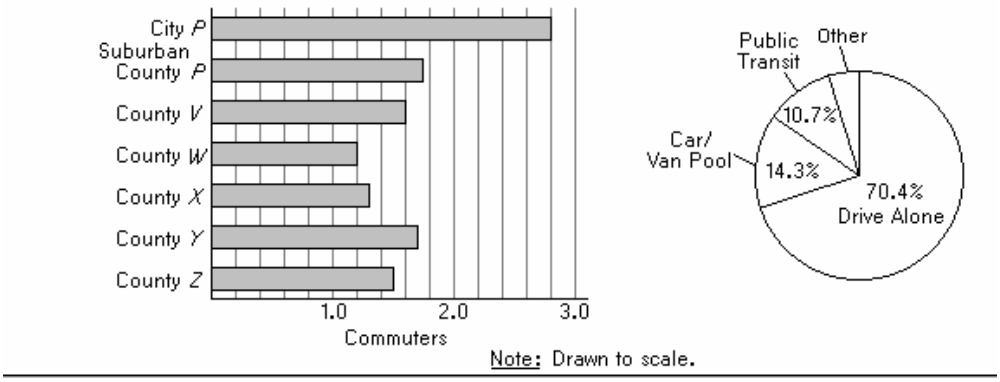
42

These questions refer to the following graphs.



Of the commuters to City P, $\frac{1}{2}$ of those who drive alone are going to change their means of travel while the rest of the commuters to City P will continue to use the same means of travel. If $\frac{1}{2}$ of those who are going to change join a car/van pool, what will then be the percent of commuters to City P who travel by car/van pool?

○ 49.5% ○ 45.9% ○ 35.2% ○ 31.9% ○ 28.3%



@D

43

If the total number of commuters to County W is twice the number to County Z, and if the average number of vehicles that transport commuters daily to County W is 30,000, what is the approximate average number of vehicles that transport commuters daily to County Z ?

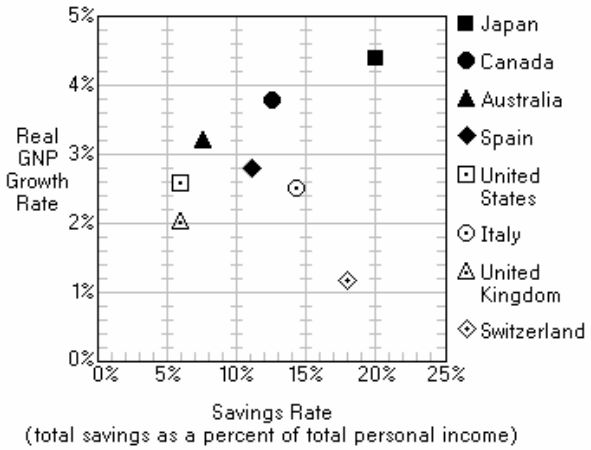
○ 12,000
○ 15,000
○ 18,000
○ 27,000
○ 36,000

@A

44

These questions refer to the following graph.

NATIONAL SAVINGS RATE AND
REAL GROSS NATIONAL PRODUCT (GNP) GROWTH RATE
FOR SELECTED COUNTRIES
1971–1985



For which of the countries was the difference between its savings rate and its real GNP growth rate least?

- Japan
- Canada
- Switzerland
- The United States
- The United Kingdom

@D

Which of the following statements can be inferred from the graph?

I. On the average, people in the United States saved about the same amount of money as people in the United Kingdom.
II. The median of the savings rates for the eight countries was greater than 11 percent.
III. Only two of the countries had a higher savings rate than Italy.

- I only
- II only
- III only
- I and II
- II and III

45

@E

A certain doctor suggests that an individual's daily water intake be $\frac{1}{2}$ ounce per pound of body weight plus 8 ounces for every 25 pounds by which the individual exceeds his or her ideal weight. If this doctor suggests a daily water intake of 136 ounces for a particular 240-pound individual, how many pounds above his or her ideal weight is that individual?

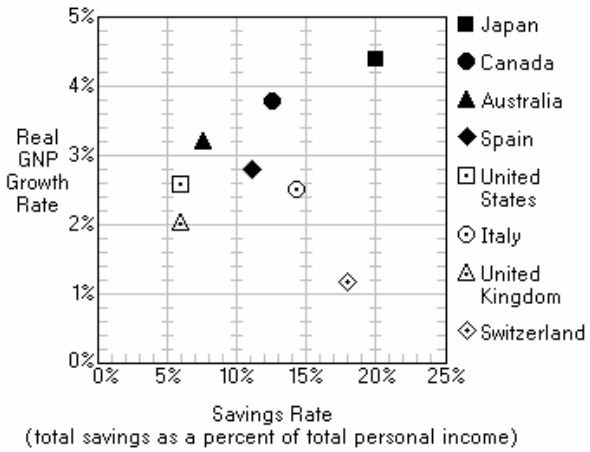
- $12\frac{1}{2}$
- 16
- 30
- 50
- 120

46

@D

These questions refer to the following graph.

NATIONAL SAVINGS RATE AND REAL GROSS NATIONAL PRODUCT (GNP) GROWTH RATE FOR SELECTED COUNTRIES 1971-1985



For how many of the countries shown was the savings rate more than 5 times the real GNP growth rate?

- Five
- Four
- Three
- Two
- One

47

@D

Column A	Column B
$\frac{10}{(0.9)^2}$	$\frac{10^2}{9}$

- The quantity in Column A is greater.
- The quantity in Column B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the information given.

48

@A

If the average (arithmetic mean) of x, y, z, 5, and 7 is 8, which of the following must be true?

I. The median of the five numbers cannot be 5.
II. At least one of x, y, and z is greater than 9.
III. The range of the five numbers is 2 or more.

- I only
- II only
- III only
- I and III
- II and III

49

@E

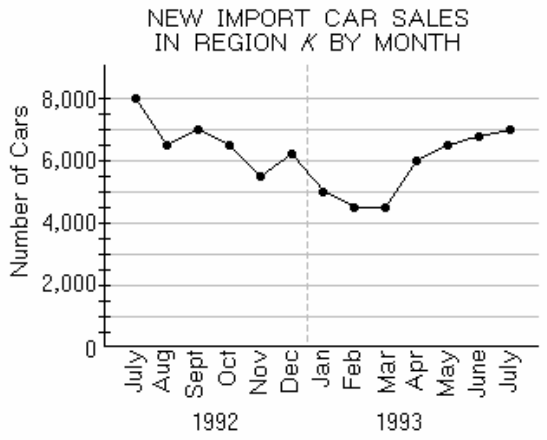
The odds that a certain event will occur is the ratio of the probability that the event will occur to the probability that it will not occur. If the odds that Pat will win a prize are 4 to 3, what is the probability that Pat will not win the prize?

- $\frac{1}{4}$
- $\frac{1}{3}$
- $\frac{3}{7}$
- $\frac{4}{7}$
- $\frac{3}{4}$

50

@C

These questions refer to the following graph.



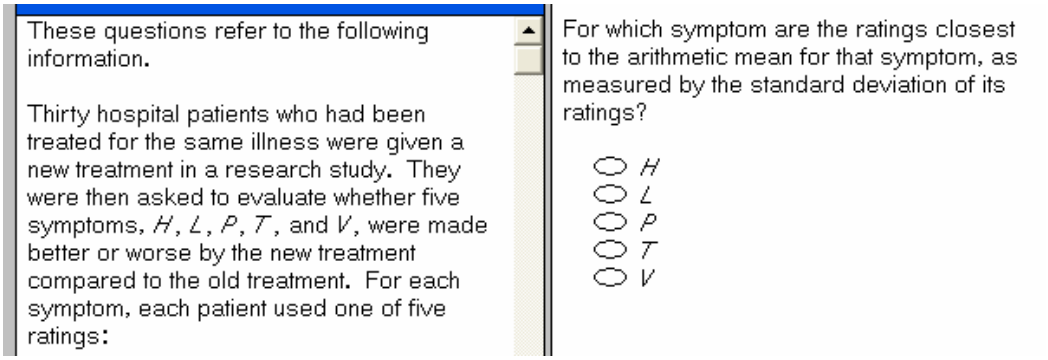
The percent increase from the least monthly car sales shown to the sales in July 1993 was most nearly equal to

- 20%
- 35%
- 45%
- 55%
- 65%

51

@D

52 图同 33



@D

53

The cost of sending a package special delivery is x cents per ounce up to 10 ounces and y cents for each ounce in excess of 10. Which of the following represents the total cost, in cents, of sending special delivery a package weighing w ounces, if $w > 10$?

- $x + (w - 10)y + 10$
- $x + (w - 10) + y$
- $10x + 10(w - y)$
- $10x + y(w - 10)$
- $10x + wy$

@D

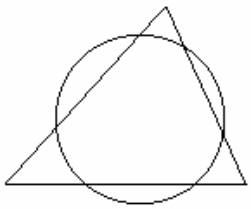
54

The jewels in a certain tiara consist of diamonds, rubies, and emeralds. If the ratio of diamonds to rubies is $\frac{5}{6}$ and the ratio of rubies to emeralds is $\frac{8}{3}$, what is the least number of jewels that could be in the tiara?

- 16
- 22
- 40
- 53
- 67

@D

55



Column A	Column B
The area of the triangular region	The area of the circular region

@D

56

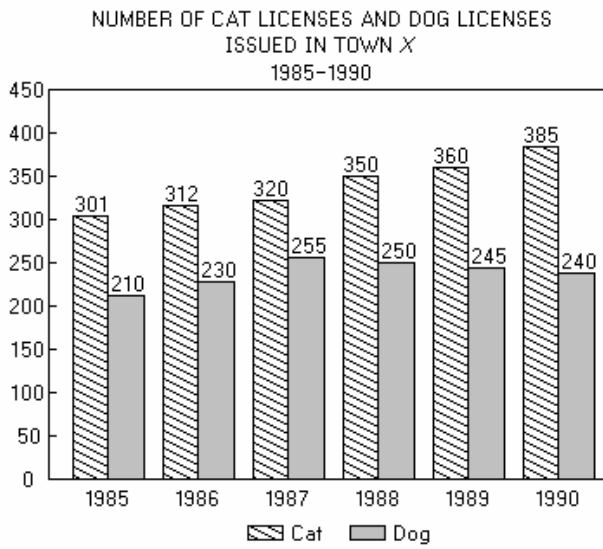
If 3 cars have traveled a total of 180,000 miles and the distance traveled by each car differs by at least 1 mile from the distance traveled by either of the other 2 cars, what is the minimum possible number of miles traveled by the car with the most mileage?

- ⬭ 60,001
- ⬭ 60,002
- ⬭ 61,000
- ⬭ 91,000
- ⬭ 180,000

@A

57

These questions refer to the following graph.



According to the graph, which of the following statements must be true?

I. For each of the years 1986 through 1990, the number of cat licenses issued was greater than that of the previous year.

II. In Town *X* more households had dogs in 1986 than in 1985.

III. For at least one of the years shown, the number of cat licenses issued was more than $1\frac{1}{2}$ times the number of dog licenses issued.

- ⬭ I only
- ⬭ II only
- ⬭ III only
- ⬭ I and II
- ⬭ I and III

@E

58

How many 4-digit numbers begin with an odd digit and end with an even digit?

- 250
- 500
- 2,000
- 2,500
- 5,000

@D

59

Column A	Column B
$\sqrt{(79)(80)(81)(82)}$	6,400

@A

60

In a bowl that contains 20 marbles, 7 are green, 6 are red, and the remainder are blue. Two marbles are to be drawn at random from the bowl without replacement.

Column A	Column B
The probability that one marble is green and the other marble is red	The probability that one marble is green and the other marble is blue

@B

61

If the sum of four consecutive even integers is 340, then the average of the two larger integers is

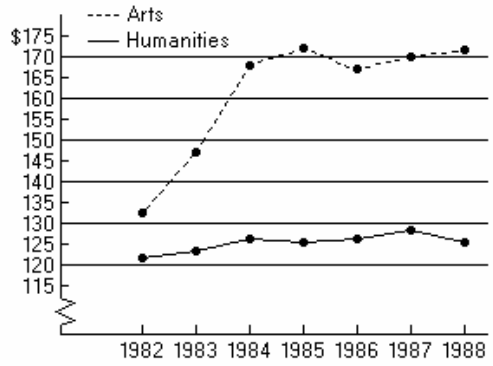
- 83
- 85
- 86
- 87
- 88

@D

62

These questions refer to the following graph.

FEDERAL GRANTS TO THE ARTS AND THE HUMANITIES
(in millions of dollars)



Note: Drawn to scale.

In 1987, $30 million of the total amount of federal grants to the arts was appropriated to match funds raised through private sources. What was the ratio of federal matching funds to federal nonmatching funds in that year?

- 1 to 1
- 3 to 14
- 3 to 17
- 3 to 20
- 14 to 3

@B

63

The 20 people at a party are divided into n mutually exclusive groups in such a way that the number of people in any group does not exceed the number in any other group by more than 1.

Column A	Column B
The value of n if at least one of the groups consists of 3 people	6

@D

64

Twenty-seven people applied for a certain managerial job. According to one report, the first interview narrowed the field down to fewer than 7 candidates. Another report claimed that the first interview eliminated fewer than 23 applicants from consideration. If both reports are true, and if x applicants were eliminated by the first interview, what are the possible values of x ?

- 21 only
- 22 only
- 20 and 21 only
- 21 and 22 only
- 21, 22, and 23

@D

65

To obtain an FHA mortgage for $50,000 or more, the home buyer must have a down payment equal to 4 percent of the first $25,000 of the mortgage amount and 5 percent of the portion in excess of $25,000. At settlement the buyer pays a mortgage-insurance premium equal to 3 percent of the mortgage amount. What is the maximum FHA mortgage, if any, a buyer can obtain if the buyer has only $6,000 available for the down payment and insurance premium?

- ⬭ $62,500
- ⬭ $71,875
- ⬭ $78,125
- ⬭ $125,000
- ⬭ The home buyer cannot obtain an FHA mortgage.

@C

66

A $550 donation to a community fund is to be divided among three organizations. The hospital is to get twice as much as the community recreation center and three times as much as the volunteer fire company. How much of the donation is to go to the community recreation center?

- ⬭ $50
- ⬭ $75
- ⬭ $100
- ⬭ $150
- ⬭ $200

@D

67

If n is a positive integer, then n^+ denotes a number such that $n < n^+ < n + 1$.

Column A	Column B
$\frac{20^+}{4^+}$	5^+

- ⬭ The quantity in Column A is greater.
- ⬭ The quantity in Column B is greater.
- ⬭ The two quantities are equal.
- ⬭ The relationship cannot be determined from the information given.

@D

68

A certain holiday is always on the fourth Tuesday of Month *X*. If Month *X* has 30 days, on how many different dates of Month *X* can the holiday fall?

- Four
- Five
- Six
- Seven
- Eight

@D

69

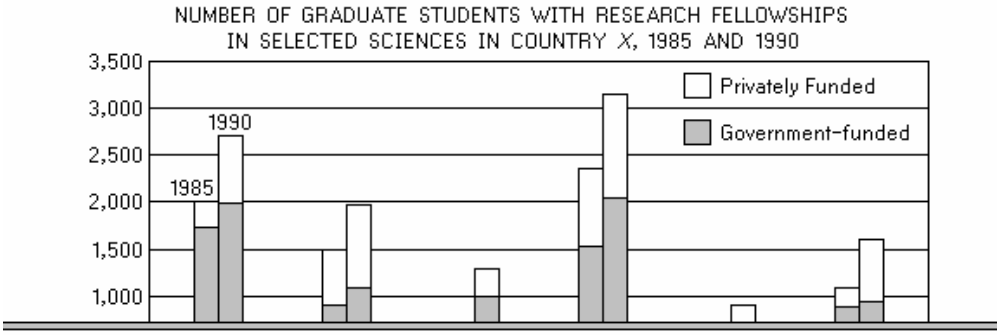
How many positive integers can be expressed as a product of two or more of the prime numbers 5, 7, 11, and 13 if no one product is to include the same prime factor more than once?

- Eight
- Nine
- Ten
- Eleven
- Twelve

@D

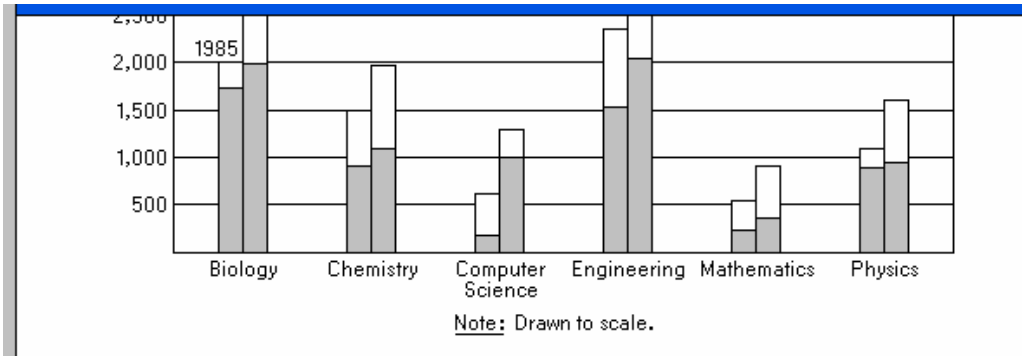
70

These questions refer to the following data.



In 1990 for which of the selected sciences did the greatest percent of its graduate students have research fellowships?

- Biology
- Chemistry
- Computer science
- Engineering
- Physics



GRADUATE STUDENTS IN SELECTED SCIENCES
IN COUNTRY *X*, 1990

	Number of Graduate Students	Number with Research Fellowships
Biology	3,691	2,700
Chemistry	2,498	1,959
Computer Science	2,196	1,310
Engineering	6,920	3,114
Mathematics	2,450	889
Physics	2,824	1,614

@B

71

w, x, y, and z are all integers such that $1 < w < x < y < z$ and $wxyz = 210$.

Column A	Column B
$w + z$	10

- The quantity in Column A is greater.
- The quantity in Column B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the information given.

@B

72

$\frac{9}{20}$ of 2.8 is

- 0.00126
- 0.0126
- 0.126
- 1.26
- 12.6

@D

73

Seven one-dollar bills are to be distributed among Lucia, Gomez, and Domingo so that each person receives at least \$1.

Column A	Column B
The number of ways to distribute the bills so that at least one person receives at least \$3	The total number of ways to distribute the bills

@C

74

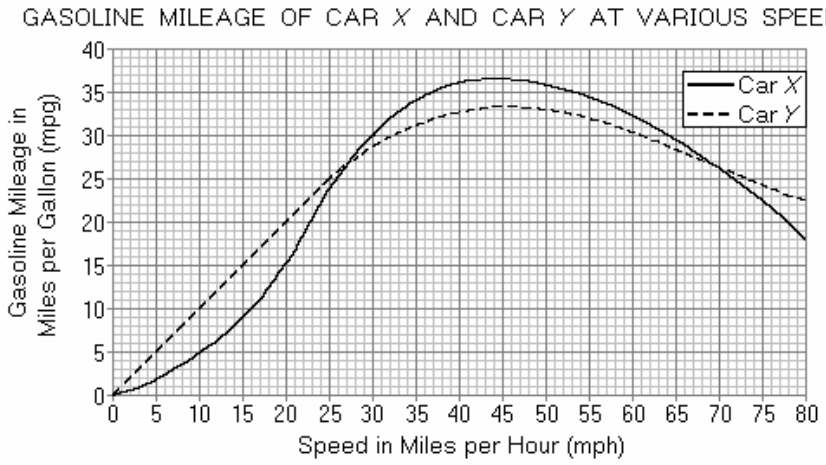
$3 < x < 5$

Column A	Column B
$\frac{3+x}{3}$	$\frac{5+x}{x}$

@D

75

These questions refer to the following graph, which is drawn to scale.



If car X is driven at a constant speed such that its gasoline mileage is 24 miles per gallon, then the speed of car X, to the nearest mile per hour, could be

○ 20 mph ○ 22 mph ○ 29 mph ○ 71 mph ○ 73 mph

@E

76

Approximately how many gallons of gasoline would car X use if it were driven for 2 hours at a constant speed of 45 miles per hour?

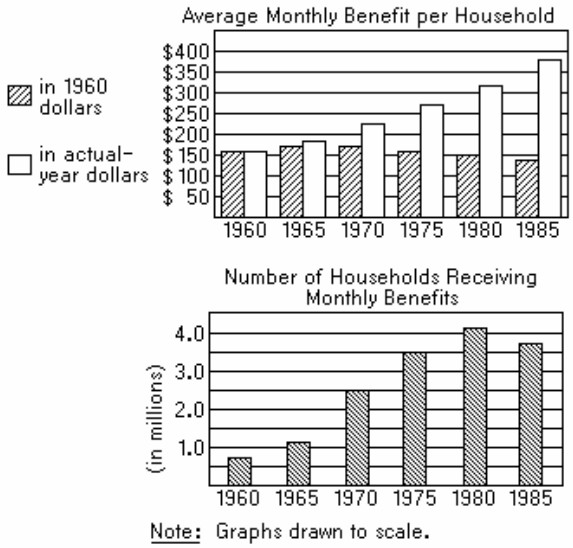
○ 1.0 ○ 1.5 ○ 2.0 ○ 2.5 ○ 3.0

@D

77

These questions refer to the following graphs.

GOVERNMENT AID TO FAMILIES
WITH DEPENDENT CHILDREN



Note: Graphs drawn to scale.

If there is an 80 percent increase from 1970 to 1995 in the number of households receiving monthly benefits, then the increase in the number of households receiving monthly benefits from 1985 to 1995 will be approximately

- 1,200,000
- 1,100,000
- 900,000
- 700,000
- 500,000

@D

78

At a sale, the cost of each tie was reduced by 20 percent and the cost of each belt was reduced by 30 percent.

Column A	Column B
The percent reduction on the total cost of 1 tie and 2 belts	25%

@D

79

When the positive integer n is divided by 7, the quotient is q and the remainder is 4. When $2n$ is divided by 7, the remainder is 1 and the quotient, in terms of q, is

- $\frac{q}{2}$
- $\frac{q}{2} + 1$
- $2q$
- $2q + 1$
- $2q + 2$

@D

80

Column A	Column B
100,210 × 90,021	100,021 × 90,210

@B

81

Both soup S and soup T contain polyunsaturated fat, and each contains more saturated fat than polyunsaturated fat. Soup T contains 2 more grams of saturated fat and 2 more grams of polyunsaturated fat per serving than soup S.

Column A	Column B
The ratio of the amount of saturated fat to the amount of polyunsaturated fat in soup S	The ratio of the amount of saturated fat to the amount of polyunsaturated fat in soup T

@A

82

WEATHER FORECAST FOR NOVEMBER 24

Sunrise: 6:53 in the morning
Sunset: 4:32 in the afternoon
Expected hours of sunshine: 70% of maximum possible sunshine hours

According to the weather forecast above, approximately how many hours of sunshine are expected on November 24 ?

- ⬭ $5\frac{1}{4}$
- ⬭ $6\frac{3}{4}$
- ⬭ $7\frac{1}{2}$
- ⬭ $8\frac{1}{4}$
- ⬭ $9\frac{3}{4}$

@B

83

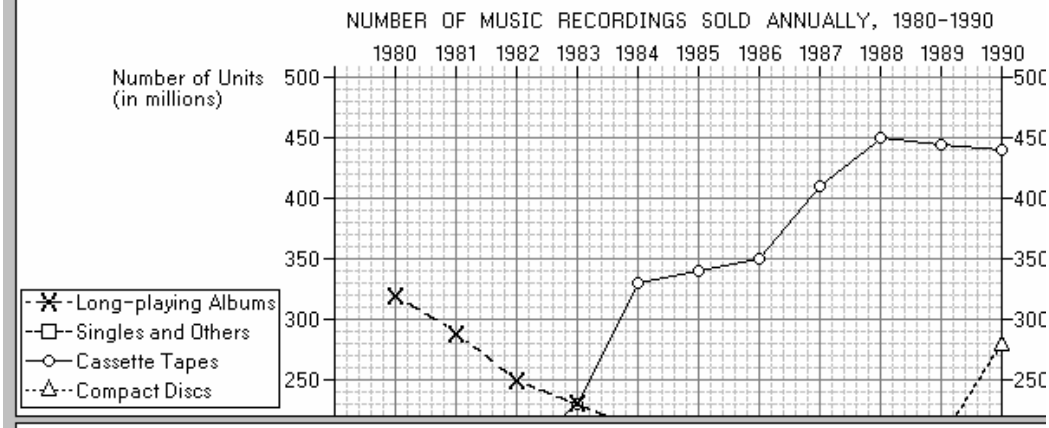
If $\frac{N}{2}$ and $\frac{M}{5}$ are both integers, which of the following expressions must also be an integer?

- $\frac{N+M}{7}$
- $\frac{(N)(M)}{7}$
- $\frac{\left(\frac{N}{2}\right)+\left(\frac{M}{5}\right)}{2}$
- $\frac{N+M}{10}$
- $\frac{(N)(M)}{10}$

@E

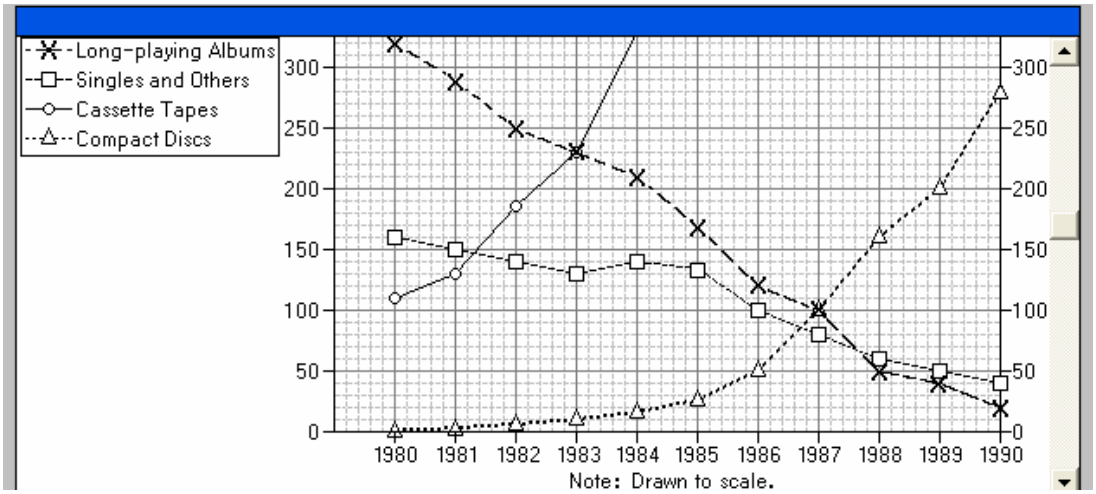
84

These questions refer to the following graph.



If the total value of sales of long-playing albums in 1985 was $1,280 million, then the average (arithmetic mean) selling price of a long-playing album that year was closest to

- $6.00
- $6.50
- $7.00
- $7.50
- $8.00



@D

85

The operation ⊙ is defined for all real numbers x and y by the equation $x \odot y = x^2 + y^2 - xy$. Each of the following must be true EXCEPT

- $x \odot x = x^2$
- $x \odot y = y \odot x$
- $x \odot 1 = x$
- $x \odot 0 = x^2$
- $x \odot y = (-x) \odot (-y)$

@C

86

These questions refer to the following table.

LABOR FORCE IN SELECTED REGIONS AND IN SELECTED COUNTRIES WITHIN THOSE REGIONS—1985, 1990, AND 2000 (PROJECTED)
(numbers in thousands)

	1985	1990	2000 (projected)	Change from 1985 to 1990 Number	Change from 1985 to 1990 Percent	Projected Change from 1990 to 2000 Number	Projected Change from 1990 to 2000 Percent
World	2,163,644	2,363,547	2,752,524	199,903	9.2%	388,977	16.5%
North America	129,592	135,438	146,561	5,846	4.5	11,123	8.2
Canada	12,723	13,360	14,461	637	5.0	1,101	8.2
United States	116,800	122,005	132,017	5,205	4.5	10,012	8.2
Caribbean	12,287	13,813	16,732	1,526	12.4	2,919	21.1
Latin America	140,249	158,285	199,959	18,036	12.9	41,674	26.3
Central America	34,186	40,007	53,631	5,821	17.0	13,624	34.1
Europe	226,373	231,702	238,186	5,329	2.4	6,484	2.8
Eastern Europe	58,036	59,336	62,946	1,300	2.2	3,610	6.1

From 1990 to 2000, the projected gain in the number of people in the United States labor force is approximately what percent of the projected gain for Asia?

- 48%
- 24%
- 17%
- 9%
- 4%

World	2,163,644	2,363,547	2,752,524	199,903	9.2%	388,977	16.5%
North America.....	129,592	135,438	146,561	5,846	4.5	11,123	8.2
Canada.....	12,723	13,360	14,461	637	5.0	1,101	8.2
United States	116,800	122,005	132,017	5,205	4.5	10,012	8.2
Caribbean	12,287	13,813	16,732	1,526	12.4	2,919	21.1
Latin America	140,249	158,285	199,959	18,036	12.9	41,674	26.3
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Europe	226,373	231,702	238,186	5,329	2.4	6,484	2.8
Eastern Europe...	58,036	59,336	62,946	1,300	2.2	3,610	6.1
Northern Europe..	40,596	41,363	42,226	767	1.9	863	2.1
Southern Europe..	56,888	59,019	61,742	2,131	3.7	2,723	4.6
Western Europe..	70,852	71,984	71,272	1,132	1.6	(712)	−1.0
Asia	1,292,138	1,436,522	1,680,559	144,384	11.2	244,037	17.0
China	617,906	679,900	760,917	61,994	10.0	81,017	11.9
Japan.....	59,772	62,202	64,352	2,430	4.1	2,150	3.5

Source: International Labor Office, Economically Active Population Estimates and Projections, 1950-2025

@E

87

T is no more than 20 percent greater than the integer x, and T is no smaller than a number 20 percent less than the integer x. If $T = 60$, which of the following indicates the smallest possible interval for x ?

- ⬭ $40 \le x \le 80$
- ⬭ $48 \le x \le 75$
- ⬭ $48 \le x \le 72$
- ⬭ $50 \le x \le 78$
- ⬭ $50 \le x \le 75$

@E

88

The average (arithmetic mean) of w, x, and y is 9.

Column A	Column B
The average (arithmetic mean) of $2w - y$, $3x + 6$, and $3y - x$	20

@C

89

Rack *A* holds 80 pairs of slacks with prices ranging from \$12 to \$15 a pair, and rack *B* holds 60 pairs of slacks with prices ranging from \$13 to \$18 a pair. If all the slacks are sold, what is the greatest amount by which the revenue from the sale of slacks on rack *A* could possibly exceed the revenue from the sale of slacks on rack *B*?

- \$430
- \$412
- \$122
- \$120
- \$112

@B

90

Column A	Column B
$(2x + 3y)^2$	$4x^2 + 6xy + 9y^2$

@D

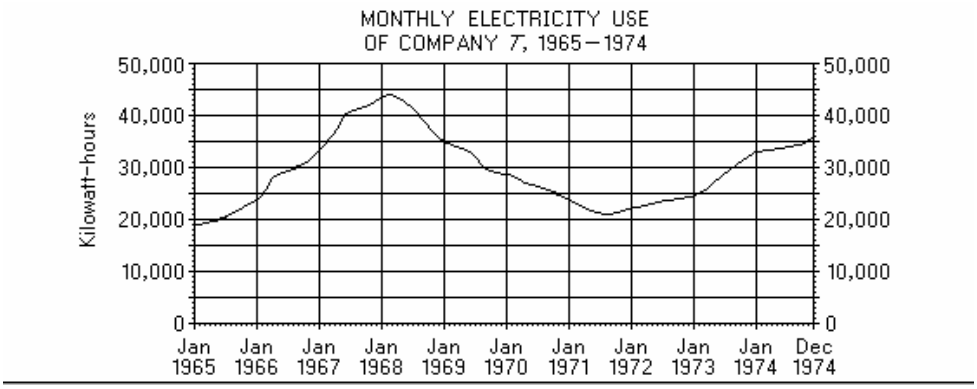
91

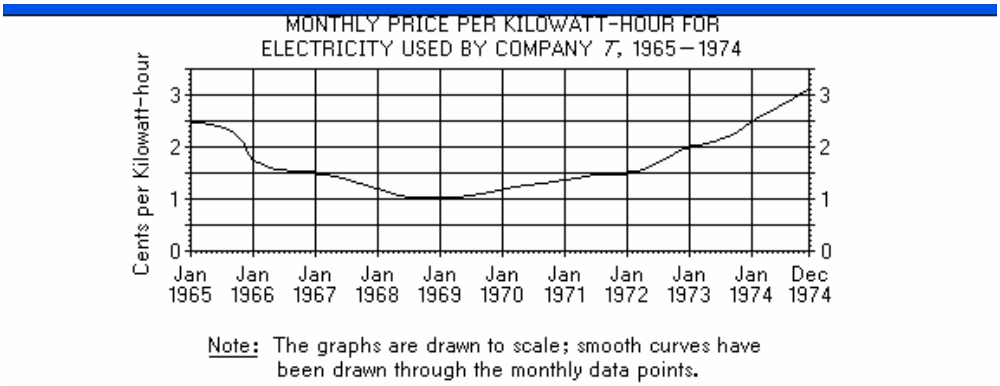
If $72.42 = k\left(24 + \frac{n}{100}\right)$, where k and n are positive integers and $n < 100$, then $k + n =$

- 17
- 16
- 15
- 14
- 13

@A

92





Note: The graphs are drawn to scale; smooth curves have been drawn through the monthly data points.

In how many of the ten years from 1965 through 1974 was the electricity use of Company T between 25,000 and 30,000 kilowatt-hours for at least one month?

- None
- One
- Two
- Three
- Four

@E

93

Approximately how many kilowatt-hours of electricity did Company T use during the entire year of 1971 ?

- 190,000
- 210,000
- 230,000
- 250,000
- 270,000

@E

94

Which of the following fractions is equal to the repeating decimal 0.3636 . . . ?

- ⬭ $\frac{1}{275}$
- ⬭ $\frac{2}{55}$
- ⬭ $\frac{4}{99}$
- ⬭ $\frac{4}{11}$
- ⬭ $\frac{4}{9}$

@D

95

These questions refer to the following table.

POPULATION DATA FOR TEN SELECTED STATES IN 1980 AND 1987

State	Population (in thousands) 1980	Population (in thousands) 1987	Percent Change in Population, 1980–1987	Population Per Square Mile in 1987
A	23,668	27,663	16.9	177
B	17,558	17,825	1.5	372
C	14,229	16,789	18.0	64
D	9,746	12,023	23.4	222
E	11,864	11,936	0.6	266
F	11,427	11,582	1.4	208
G	10,798	10,784	−0.1	263
H	9,262	9,200	−0.7	162
I	7,365	7,672	4.2	1,027
J	5,882	6,413	9.0	131

If the population of State *I* had increased by the same amount each year from 1980 to 1988, approximately what would the population of State *I* have been in 1988 ?

- ⬭ 7,628,000
- ⬭ 7,676,000
- ⬭ 7,698,000
- ⬭ 7,710,000
- ⬭ 7,716,000

@E

96

$x + y = 1$
$x - y = 1$

Column A	Column B
xy	0

@C

97

A political poll showed that 80 percent of those polled said they would vote for proposition *P*. Of those who said they would vote for proposition *P*, 70 percent actually voted for *P*, and of those who did not say they would vote for *P*, 20 percent actually voted for *P*. What percent of those polled voted for *P* ?

- 56%
- 60%
- 64%
- 76%
- 90%

@B

98

For which of the following values of v is $v + \frac{1}{v}$ greatest?

- 0.002
- 0.005
- 2
- 5
- 200

@A

99

What percent of the integers between 100 and 999, inclusive, have all three digits the same?

- 1%
- 2%
- 3%
- 4%
- 5%

@A

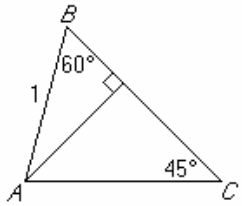
100

The average (arithmetic mean) height for a group of m men is 70 inches, and the average height for a group of f women is 64 inches. When the groups are combined, the average height is 66 inches.

Column A	Column B
m	f

@B

101



Column A	Column B
The length of line segment BC	$\sqrt{3}$

@B

102

Diane completed each of her exercise sets in 25 seconds and rested for 55 seconds between the exercise sets. What is the ratio of the amount of time it took her to complete an exercise set to the amount of time she rested between the sets?

- 5 : 6
- 5 : 11
- 6 : 11
- 11 : 5
- 11 : 6

@B

103

If n is an integer, then the units digit of n^2 CANNOT be

- 0
- 2
- 4
- 5
- 6

@B

104

The decorating committee for a dance plans to fringe the 3-inch-wide end of a streamer by making small cuts every $\frac{1}{16}$ inch. How many cuts must be made to fringe the end?

- 45
- 46
- 47
- 48
- 49

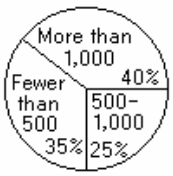
@C

105

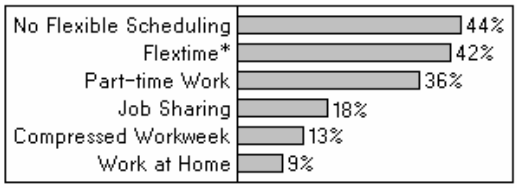
These questions refer to the following graphs.

TYPE OF WORK SCHEDULING IN 300 SURVEYED COMPANIES

Distribution of Companies by Number of Employees



Percent of Companies Not Offering Flexible Scheduling and Percent Offering Any of Five Flexible-Scheduling Options



*Flextime is the option given to full-time employees to vary the time that the workday begins and ends.

What is the greatest number of the companies surveyed that could have offered both the compressed-workweek option and the work-at-home option?

- 12
- 22
- 27
- 39
- 66

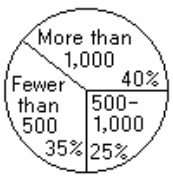
@C

106

These questions refer to the following graphs.

TYPE OF WORK SCHEDULING IN 300 SURVEYED COMPANIES

Distribution of Companies by Number of Employees



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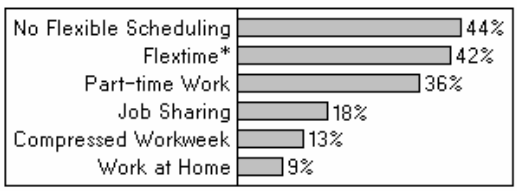

*Flextime is the option given to full-time employees to vary the time that the workday begins and ends.

If $\frac{1}{5}$ of the companies with fewer than 500 employees and $\frac{1}{10}$ of those with more than 1,000 employees offered the job-sharing option, what fraction of the companies with 500-1,000 employees offered this option?

- $\frac{1}{20}$
- $\frac{1}{10}$
- $\frac{4}{25}$
- $\frac{1}{5}$
- $\frac{7}{25}$

@E

107

$0 < p < 1$

Column A	Column B
The greatest value of $p(1-p)$	$\frac{1}{2}$

@B

108

The total cost of $400 for renting a bus was divided equally among a group of *N* people.

Column A	Column B
The percent reduction in the cost for each person in that group if the total cost of $400 had been divided equally among 2*N* people	40 percent

@A

109

A thin strip of binding 30 feet long just fits around the perimeter of a rectangular rug that covers an area of 54 square feet.

Column A	Column B
The length of the longer side of the rug	10 feet

@B

110

If revenues of $196,000 from division *A* of Company *X* represent 28 percent of the total revenues of Company *X* for the year, what were the total revenues of Company *X* for the year?

- ⬭ $141,100
- ⬭ $272,000
- ⬭ $413,300
- ⬭ $596,100
- ⬭ $700,000

@E

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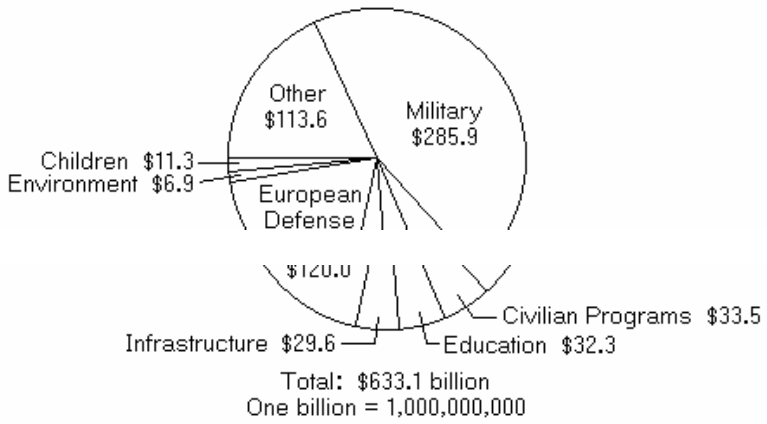
These questions refer to the following graph.

SELECTED CATEGORIES OF THE UNITED STATES FEDERAL BUDGET, 1993
(in billions of dollars)



Total: $633.1 billion
One billion = 1,000,000,000

Note: Drawn to scale.

If $\frac{1}{3}$ of the amount budgeted for the environment was allocated to national parks, approximately how many billion dollars were allocated to other environmental areas?

○ 2.3 ○ 3.3 ○ 3.8 ○ 4.6 ○ 5.2

@D

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In an xy-coordinate system, if line k intersects the y-axis at (0, 6) and has a slope of −3, then k intersects the x-axis at

○ (−2, 0)
○ $(-\frac{1}{2}, 0)$
○ $(\frac{1}{2}, 0)$
○ (2, 0)
○ (3, 0)

@D