

# *California High School Exit Examination*

## **Mathematics Released Test Questions**



California Department of Education  
October 2008

## Number Sense

1. The radius of the earth's orbit is 150,000,000,000 meters. What is this number in scientific notation?

A  $1.5 \times 10^{-11}$   
 B  $1.5 \times 10^{11}$   
 C  $15 \times 10^{10}$   
 D  $150 \times 10^9$

M00213

2.  $3.6 \times 10^2 =$

A 3.600  
 B 36  
 C 360  
 D 3,600

M00036

3. Which expression represents 0.0000007 in scientific notation?

A  $7 \times 10^{-9}$   
 B  $7 \times 10^{-7}$   
 C  $7 \times 10^7$   
 D  $7 \times 10^9$

M20956

4. The five members of a band are getting new outfits. Shirts cost \$12 each, pants cost \$29 each, and boots cost \$49 a pair. What is the total cost of the new outfits for all of the members?

A \$90  
 B \$95  
 C \$450  
 D \$500

M00331

5.  $\frac{11}{12} - \left( \frac{1}{3} + \frac{1}{4} \right) =$

A  $\frac{1}{3}$   
 B  $\frac{3}{4}$   
 C  $\frac{5}{6}$   
 D  $\frac{9}{5}$

M02048

6. Which of the following numerical expressions results in a negative number?

A  $(-7) + (-3)$   
 B  $(-3) + (7)$   
 C  $(3) + (7)$   
 D  $(3) + (-7) + (11)$

M00116

7. One hundred is multiplied by a number between 0 and 1. The answer has to be—

A less than 0.  
 B between 0 and 50 but not 25.  
 C between 0 and 100 but not 50.  
 D between 0 and 100.

M00275

**Number Sense**

8. John uses  $\frac{2}{3}$  of a cup of oats per serving to make oatmeal. How many cups of oats does he need to make 6 servings?

A  $2\frac{2}{3}$

B 4

C  $5\frac{1}{3}$

D 9

M23015

9. What is the value of  $\left(\frac{1}{8}\right)^2$ ?

A  $\frac{1}{64}$

B  $\frac{1}{32}$

C  $\frac{1}{16}$

D  $\frac{1}{4}$

M10014

10. If Freya makes 4 of her 5 free throws in a basketball game, what is her free throw shooting percentage?

A 20%

B 40%

C 80%

D 90%

M00223

11. Some students attend school 180 of the 365 days in a year. About what part of the year do they attend school?

A 18%

B 50%

C 75%

D 180%

M00047

12. What number equals  $\frac{3}{8}$ ?

A 0.267

B 0.375

C 2.67

D 3.75

M13470

13. Last year  $\frac{7}{16}$  of all students at a school participated in the science fair. About what percentage of the students participated?

A 18%

B 23%

C 44%

D 56%

M32378

**Number Sense**

14. The cost of an afternoon movie ticket last year was \$4.00. This year an afternoon movie ticket costs \$5.00. What is the percent increase of the ticket from last year to this year?

- A 10%
- B 20%
- C 25%
- D 40%

M02158

17. On Monday, Lisa's fish bowl contained 1 gallon of water. On Friday, the fish bowl contained 0.75 gallon of water. By what percentage did the amount of water in Lisa's fish bowl decrease?

- A 0.25%
- B 0.75%
- C 25%
- D 75%

M12141

15. The weekly sales of a magazine increased from 500,000 to 600,000. By what percentage did the magazine sales increase?

- A 17%
- B 20%
- C 83%
- D 120%

M11242

18. Sally puts \$200.00 in a bank account. Each year the account earns 8% simple interest. How much interest will be earned in three years?

- A \$16.00
- B \$24.00
- C \$48.00
- D \$160.00

M02119

16. Traditions Clothing Store is having a sale. Shirts that were regularly priced at \$20 are on sale for \$17. What is the percentage of decrease in the price of the shirts?

- A 3%
- B 15%
- C 18%
- D 85%

M30820

19. A pair of jeans regularly sells for \$24.00. They are on sale for 25% off. What is the sale price of the jeans?

- A \$6.00
- B \$18.00
- C \$20.00
- D \$30.00

M02870

20. A CD player regularly sells for \$80. It is on sale for 20% off. What is the sale price of the CD player?

- A \$16
- B \$60
- C \$64
- D \$96

M02425

**Number Sense**

21. Jana bought a car for \$4200 and later sold it for a 30% profit. How much did Jana sell the car for?

A \$1260  
B \$2940  
C \$5460  
D \$7140

M10580

24.  $\frac{10^{-2}}{10^{-4}} =$

A  $10^{-6}$   
B  $10^{-2}$   
C  $10^2$   
D  $10^8$

M02832

22. A salesperson at a clothing store earns a 2% commission on all sales. How much commission does the salesperson earn on a \$300 sale?

A \$6  
B \$15  
C \$60  
D \$150

M20470

25. Which of the following is equivalent to  $7^{-6} \cdot 7^4$ ?

A  $7^{-24}$   
B  $7^{-10}$   
C  $7^{-2}$   
D  $7^2$

M12679

23. Which number equals  $(2)^{-4}$ ?

A  $-8$   
B  $-\frac{1}{16}$   
C  $\frac{1}{16}$   
D  $\frac{1}{8}$

M10015

26. Which fraction is equivalent to  $\frac{5}{6} + \frac{7}{8}$ ?

A  $\frac{35}{48}$   
B  $\frac{6}{7}$   
C  $\frac{20}{21}$   
D  $\frac{41}{24}$

M12713

**Number Sense**

27. Which of the following is the prime factored form of the lowest common denominator of  $\frac{7}{10} + \frac{8}{15}$ ?

- A  $5 \times 1$
- B  $2 \times 3 \times 5$
- C  $2 \times 5 \times 3 \times 5$
- D  $10 \times 15$

M02826

28. What is  $\frac{3}{4} - \frac{1}{6}$ ?

- A  $\frac{1}{6}$
- B  $\frac{1}{3}$
- C  $\frac{7}{12}$
- D  $\frac{11}{12}$

M13552

29.  $(3^8)^2 =$

- A  $3^4$
- B  $3^6$
- C  $3^{10}$
- D  $3^{16}$

M02406

30.  $4^3 \cdot 4^2 =$

- A  $4^5$
- B  $4^6$
- C  $16^5$
- D  $16^6$

M02661

31. What is  $6^2 \cdot 2^2$ ?

- A 32
- B 48
- C 144
- D 256

M22029

32. What is the value of  $\frac{2^6 \cdot 2^4}{2^5}$ ?

- A 4
- B 10
- C 16
- D 32

M25206

33. The square root of 150 is between—

- A 10 and 11.
- B 11 and 12.
- C 12 and 13.
- D 13 and 14.

M02666

**Number Sense**

34. The square of a whole number is between 1500 and 1600. The number must be between—

- A 30 and 35.
- B 35 and 40.
- C 40 and 45.
- D 45 and 50.

M00313

35. Between which two integers is the value of  $\sqrt{61}$ ?

- A 6 and 7
- B 7 and 8
- C 8 and 9
- D 9 and 10

M22059

36. If  $|x| = 3$ , what is the value of  $x$ ?

- A  $-3$  or  $0$
- B  $-3$  or  $3$
- C  $0$  or  $3$
- D  $-9$  or  $9$

M02122

37. What is the absolute value of  $-4$ ?

- A  $-4$
- B  $-\frac{1}{4}$
- C  $\frac{1}{4}$
- D  $4$

M02667

38. Which number has the greatest absolute value?

- A  $-17$
- B  $-13$
- C  $15$
- D  $19$

M12795

*Number Sense*

| Question Number | Correct Answer | Standard | School Year of Exam |
|-----------------|----------------|----------|---------------------|
| 1               | B              | 7NS1.1   | 2001–2002           |
| 2               | C              | 7NS1.1   | 2000–2001           |
| 3               | B              | 7NS1.1   | 2006–2007           |
| 4               | C              | 7NS1.2   | 2001–2002           |
| 5               | A              | 7NS1.2   | 2001–2002           |
| 6               | A              | 7NS1.2   | 2000–2001           |
| 7               | D              | 7NS1.2   | 2000–2001           |
| 8               | B              | 7NS1.2   | 2003–2004           |
| 9               | A              | 7NS1.2   | 2007–2008           |
| 10              | C              | 7NS1.3   | 2001–2002           |
| 11              | B              | 7NS1.3   | 2000–2001           |
| 12              | B              | 7NS1.3   | 2005–2006           |
| 13              | C              | 7NS1.3   | 2007–2008           |
| 14              | C              | 7NS1.6   | 2001–2002           |
| 15              | B              | 7NS1.6   | 2004–2005           |
| 16              | B              | 7NS1.6   | 2006–2007           |
| 17              | C              | 7NS1.6   | 2007–2008           |
| 18              | C              | 7NS1.7   | 2001–2002           |
| 19              | B              | 7NS1.7   | 2000–2001           |
| 20              | C              | 7NS1.7   | 2000–2001           |
| 21              | C              | 7NS1.7   | 2003–2004           |
| 22              | A              | 7NS1.7   | 2004–2005           |
| 23              | C              | 7NS2.1   | 2002–2003           |
| 24              | C              | 7NS2.1   | 2001–2002           |
| 25              | C              | 7NS2.1   | 2003–2004           |
| 26              | D              | 7NS2.2   | 2002–2003           |
| 27              | B              | 7NS2.2   | 2000–2001           |
| 28              | C              | 7NS2.2   | 2003–2004           |
| 29              | D              | 7NS2.3   | 2001–2002           |
| 30              | A              | 7NS2.3   | 2000–2001           |
| 31              | C              | 7NS2.3   | 2005–2006           |
| 32              | D              | 7NS2.3   | 2006–2007           |
| 33              | C              | 7NS2.4   | 2001–2002           |
| 34              | B              | 7NS2.4   | 2000–2001           |
| 35              | B              | 7NS2.4   | 2005–2006           |
| 36              | B              | 7NS2.5   | 2001–2002           |
| 37              | D              | 7NS2.5   | 2000–2001           |
| 38              | D              | 7NS2.5   | 2005–2006           |



*Statistics, Data Analysis, and Probability*

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

M02964

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

M02247

41. The box below shows the number of kilowatt-hours of electricity used last month at each of the houses on Harris Street.

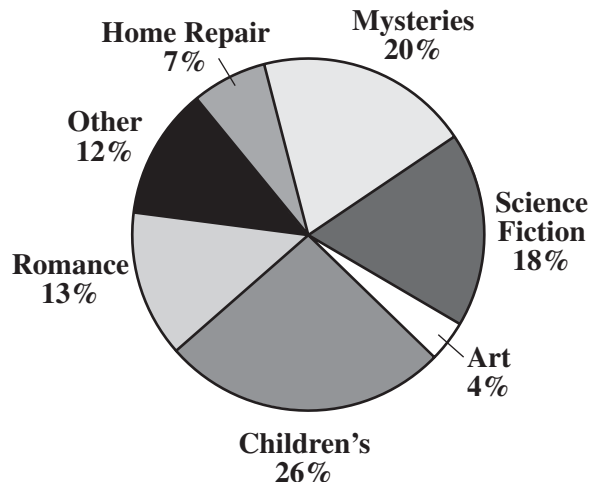
620, 570, 570, 590, 560, 640, 590, 590, 580

What is the mode of these data?

- A 560
- B 580
- C 590
- D 640

M12248

42. The Smithburg 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.

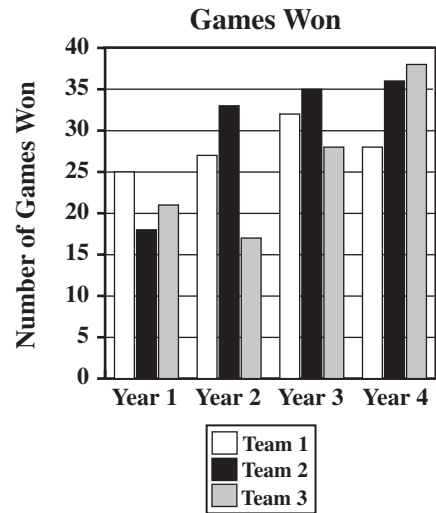
M02131

*Statistics, Data Analysis, and Probability*

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.



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

**Statistics, Data Analysis, and Probability**

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             |
| <b>Total</b>            | <b>452</b>      |

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.

M32759

**Statistics, Data Analysis, and Probability**

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   |
| Road | 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 |

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

- A  $\frac{1}{16}$   
 B  $\frac{1}{12}$   
 C  $\frac{1}{4}$   
 D  $\frac{1}{3}$

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?

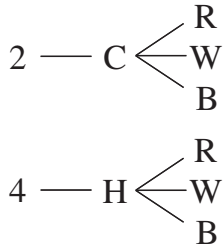
- A The probability that exactly two coins have the same outcome is  $\frac{1}{2}$ .  
 B The probability of getting exactly one tail is higher than getting exactly two tails.  
 C The probability of getting at least one head is higher than the probability of getting at least one tail.  
 D The probability that all of the coins will land on heads is the same as the probability that all of the coins will land on tails.

M13243

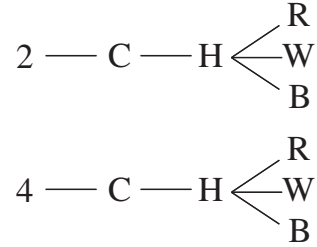
*Statistics, Data Analysis, and Probability*

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?

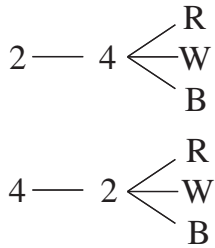
A



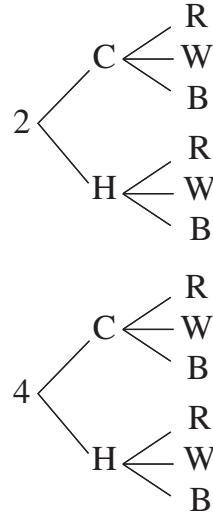
C



B



D



M00406

**Statistics, Data Analysis, and Probability**

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

**Lunch Specials**

| <i>Main Dish</i> | <i>Vegetable</i> | <i>Drink</i> |
|------------------|------------------|--------------|
| Chicken          | Broccoli         | Water        |
| Beef             | Carrots          | Soft drink   |
|                  | Peas             | Milk         |
|                  | Corn             |              |

How many 3-item combinations include a soft drink and corn?

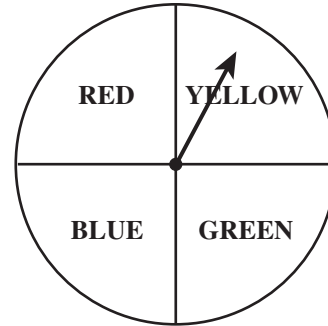
- A 2  
B 3  
C 4  
D 8

M13738

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  $\frac{1}{4}$

M11379



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  $\frac{4}{3}$

M00094

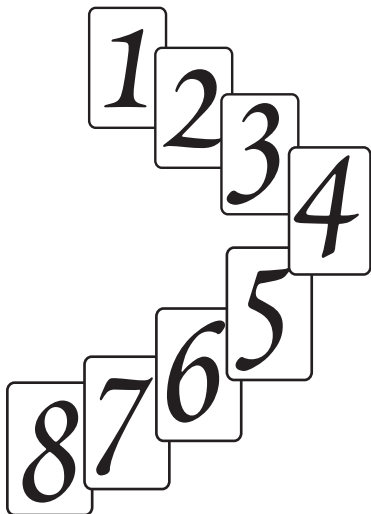
53. Fran has 16 CDs in a box: 6 country, 6 rock, 2 dance, and 2 classical. If she takes out one CD without looking, what is the probability that she will pick a rock or country CD?

- A 25%  
B 50%  
C 75%  
D 100%

M12305

*Statistics, Data Analysis, and Probability*

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  $\frac{1}{4}$   
 B  $\frac{3}{8}$   
 C  $\frac{1}{2}$   
 D  $\frac{5}{8}$

M25304

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  $\frac{2}{7}$   
 B  $\frac{5}{12}$   
 C  $\frac{7}{12}$   
 D  $\frac{5}{7}$

M20852

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  $\frac{1}{2}$   
 B  $\frac{1}{3}$   
 C  $\frac{1}{4}$   
 D  $\frac{1}{5}$

M02145

## Statistics, Data Analysis, and Probability

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  $\frac{1}{36}$   
 B  $\frac{1}{9}$   
 C  $\frac{1}{8}$   
 D  $\frac{2}{9}$

M03097

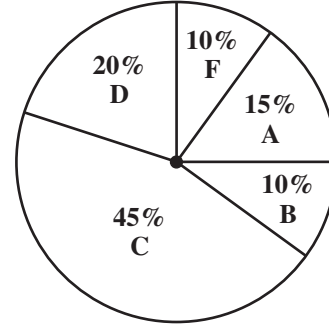
58. Anna has the letter tiles below in a bag.

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  $\frac{1}{5}$   
 B  $\frac{2}{9}$   
 C  $\frac{3}{10}$   
 D  $\frac{1}{3}$

M25311



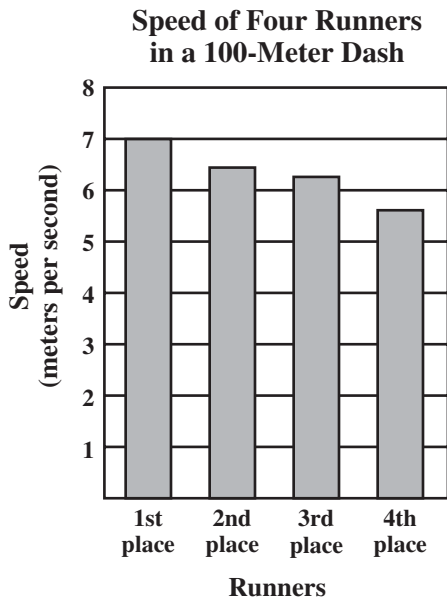
59. The circle graph shown above represents the distribution of the grades of 40 students in a certain geometry class. How many students received As or Bs?

- A 6  
 B 10  
 C 15  
 D 20

M00300



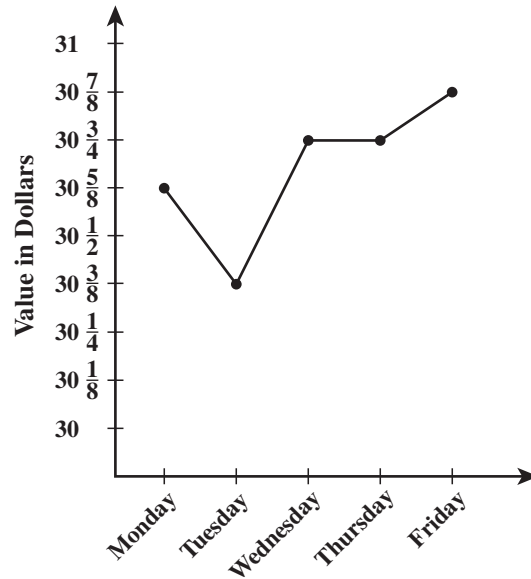
*Statistics, Data Analysis, and Probability*



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

*Statistics, Data Analysis, and Probability*

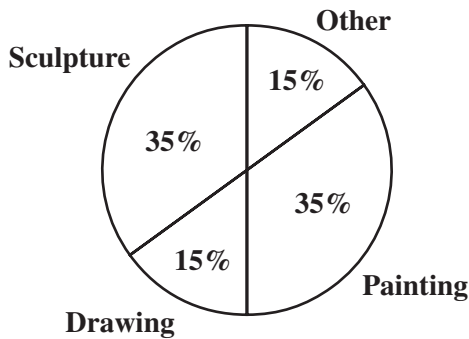
62. The students at a high school were asked to name their favorite type of art. The table below shows the results of the survey.

Art Survey

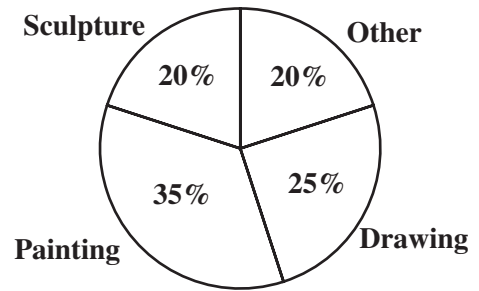
| Type of Art | Number of Students |
|-------------|--------------------|
| Painting    | 714                |
| Drawing     | 709                |
| Sculpture   | 296                |
| Other       | 305                |

Which circle graph BEST shows these data?

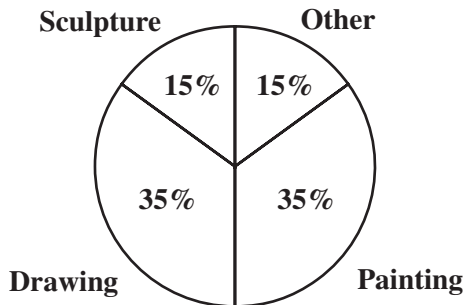
A



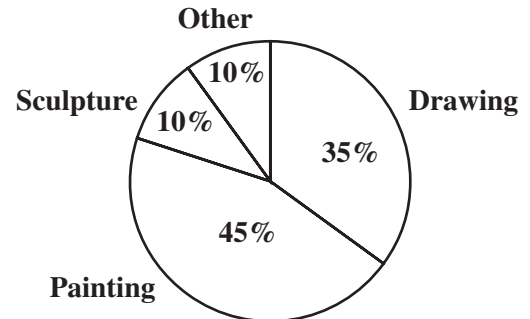
C



B



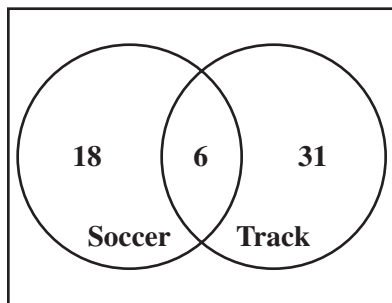
D



M13053

*Statistics, Data Analysis, and Probability*

63. The Venn diagram below shows the number of girls on the soccer and track teams at a high school.

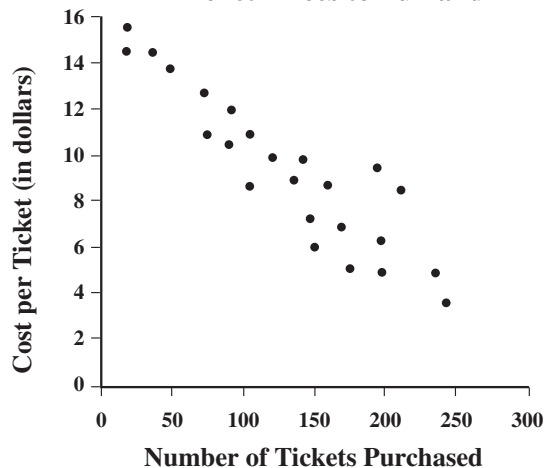


How many girls are on both the soccer and track teams?

- A 6
- B 12
- C 49
- D 55

M21162

**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?

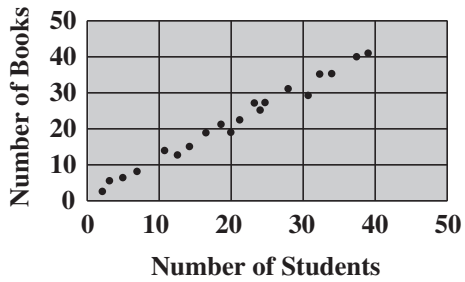
- A The cost per ticket increases as the number of tickets purchased increases.
- B The cost per ticket is unchanged as the number of tickets purchased increases.
- C The cost per ticket decreases as the number of tickets purchased increases.
- D There is no relationship between the cost per ticket and the number of tickets purchased.

M02208

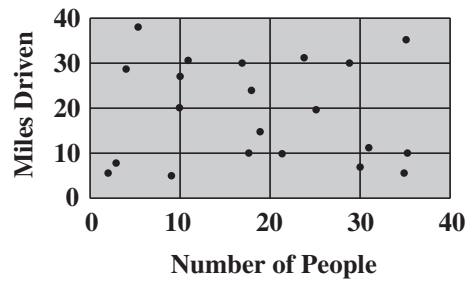
*Statistics, Data Analysis, and Probability*

65. Which scatterplot shows a negative correlation?

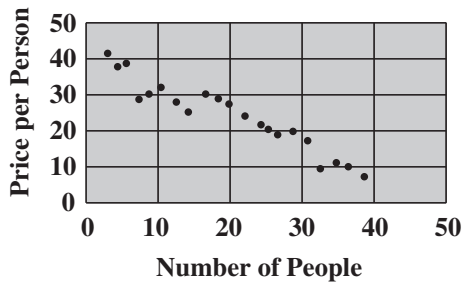
A



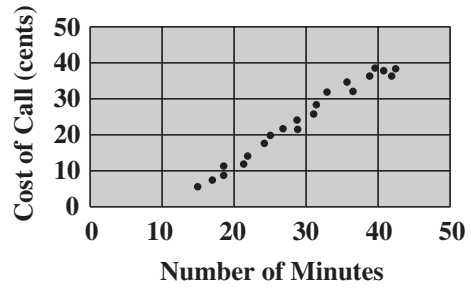
C



B



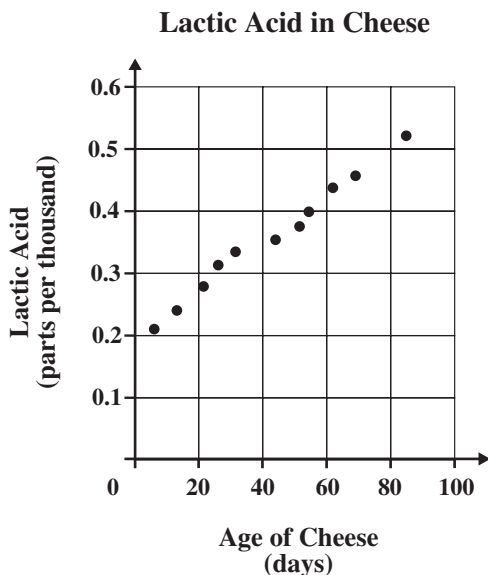
D



M02546

## Statistics, Data Analysis, and Probability

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

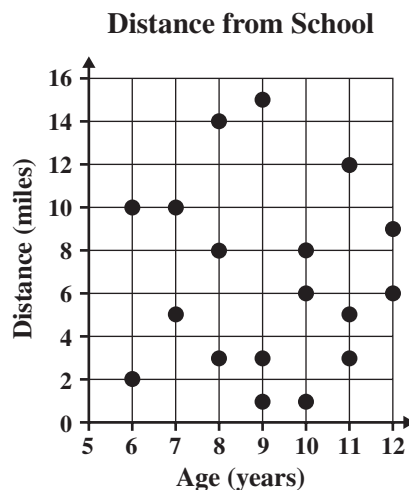


Which statement is **MOST** strongly supported by the scatterplot?

- 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.



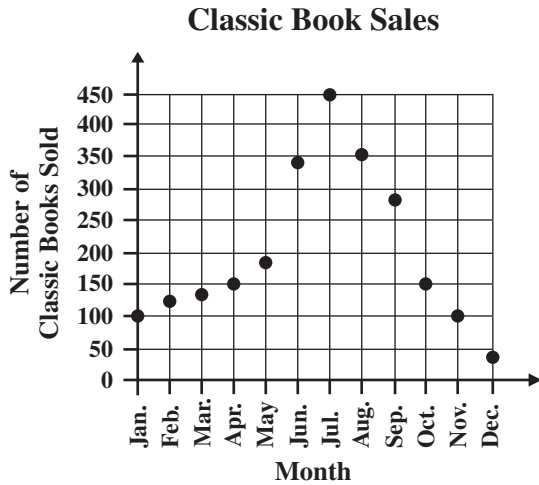
Which statement **BEST** describes the relationship between age and distance from school?

- 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.

M10565

*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.



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

*Statistics, Data Analysis, and Probability*

| Question Number | Correct Answer | Standard | School Year of Exam |
|-----------------|----------------|----------|---------------------|
| 39              | B              | 6PS1.1   | 2002–2003           |
| 40              | C              | 6PS1.1   | 2001–2002           |
| 41              | C              | 6PS1.1   | 2003–2004           |
| 42              | D              | 6PS2.5   | 2002–2003           |
| 43              | C              | 6PS2.5   | 2001–2002           |
| 44              | D              | 6PS2.5   | 2003–2004           |
| 45              | B              | 6PS2.5   | 2006–2007           |
| 46              | D              | 6PS2.5   | 2007–2008           |
| 47              | B              | 6PS3.1   | 2001–2002           |
| 48              | D              | 6PS3.1   | 2003–2004           |
| 49              | D              | 6PS3.1   | 2004–2005           |
| 50              | A              | 6PS3.1   | 2006–2007           |
| 51              | B              | 6PS3.3   | 2002–2003           |
| 52              | C              | 6PS3.3   | 2000–2001           |
| 53              | C              | 6PS3.3   | 2004–2005           |
| 54              | B              | 6PS3.3   | 2006–2007           |
| 55              | C              | 6PS3.3   | 2007–2008           |
| 56              | C              | 6PS3.5   | 2001–2002           |
| 57              | C              | 6PS3.5   | 2001–2002           |
| 58              | C              | 6PS3.5   | 2005–2006           |
| 59              | B              | 7PS1.1   | 2002–2003           |
| 60              | D              | 7PS1.1   | 2001–2002           |
| 61              | B              | 7PS1.1   | 2000–2001           |
| 62              | B              | 7PS1.1   | 2004–2005           |
| 63              | A              | 7PS1.1   | 2005–2006           |
| 64              | C              | 7PS1.2   | 2000–2001           |
| 65              | B              | 7PS1.2   | 2001–2002           |
| 66              | A              | 7PS1.2   | 2003–2004           |
| 67              | D              | 7PS1.2   | 2006–2007           |
| 68              | D              | 7PS1.2   | 2007–2008           |

## Algebra and Functions

69. Which of the following inequalities represents the statement, “A number,  $x$ , decreased by 13 is less than or equal to 39”?

A  $13 - x \geq 39$   
 B  $13 - x \leq 39$   
 C  $x - 13 \leq 39$   
 D  $x - 13 < 39$

M03049

70. A shopkeeper has  $x$  kilograms of tea in stock. He sells 15 kilograms and then receives a new shipment weighing  $2y$  kilograms. Which expression represents the weight of the tea he now has?

A  $x - 15 - 2y$   
 B  $x + 15 + 2y$   
 C  $x + 15 - 2y$   
 D  $x - 15 + 2y$

M00110

71. Divide a number by 5 and add 4 to the result. The answer is 9.

Which of the following equations matches these statements?

A  $4 = 9 + \frac{n}{5}$   
 B  $\frac{n}{5} + 4 = 9$   
 C  $\frac{5}{n} = 4$   
 D  $\frac{n + 4}{5} = 9$

M00050

72. At a local bookstore, books that normally cost  $b$  dollars are on sale for 10 dollars off the normal price. How many dollars does it cost to buy 3 books on sale?

A  $3b - 10$   
 B  $3b + 10$   
 C  $3(b - 10)$   
 D  $3(b + 10)$

M10375

73. Which system of equations represents the statements below?

The sum of two numbers is ten. One number is five times the other.

A  $\begin{cases} xy = 10 \\ y = 5x \end{cases}$   
 B  $\begin{cases} xy = 10 \\ y = x + 5 \end{cases}$   
 C  $\begin{cases} x + y = 10 \\ y = 5x \end{cases}$   
 D  $\begin{cases} x + y = 10 \\ y = x + 5 \end{cases}$

M25231



## Algebra and Functions

74. If  $n = 2$  and  $x = \frac{1}{2}$ , then  
 $n(4 - x) =$

- A 1
- B 3
- C 7
- D 10

M00034

76. What is the value of  $(3 + 5^2) \div 4 - (x + 1)$   
 when  $x = 7$ ?

- A -7
- B -1
- C 8
- D 10

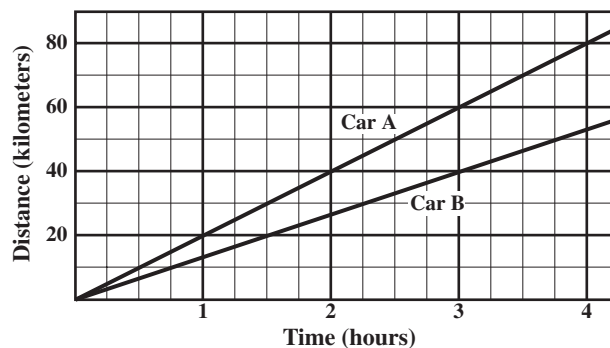
M12963

75. If  $h = 3$  and  $k = 4$ , then

$$\frac{hk + 4}{2} - 2 =$$

- A 6
- B 7
- C 8
- D 10

M00052



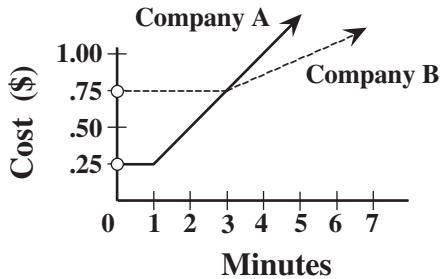
77. After three hours of travel, Car A is  
 about how many kilometers ahead of  
 Car B?

- A 2
- B 10
- C 20
- D 25

M00066

*Algebra and Functions*

78. The cost of a long distance call charged by each of two telephone companies is shown on the graph below.

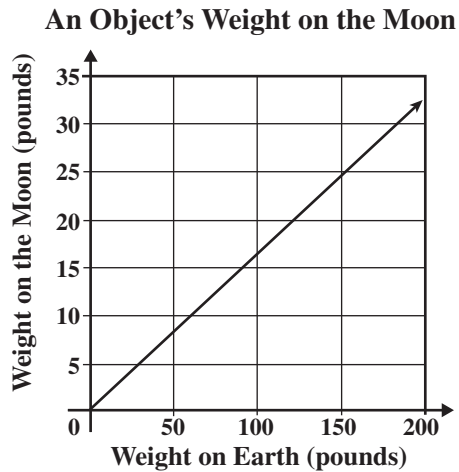


Company A is less expensive than Company B for—

- A all calls.
- B 3 minute calls only.
- C calls less than 3 minutes.
- D calls longer than 3 minutes.

M02840

79. The graph below compares the weight of an object on Earth to its weight on the Moon.



What is the approximate weight on the Moon of an astronaut who weighs 120 pounds on Earth?

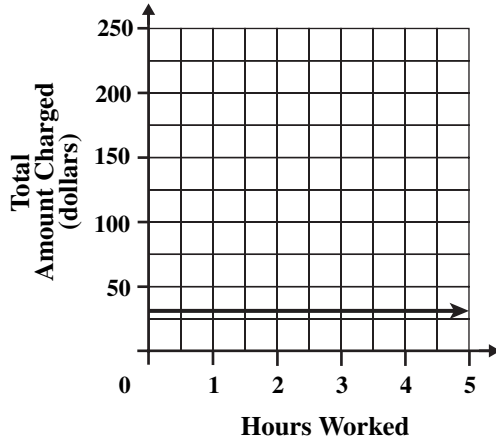
- A 15 pounds
- B 20 pounds
- C 25 pounds
- D 30 pounds

M10668

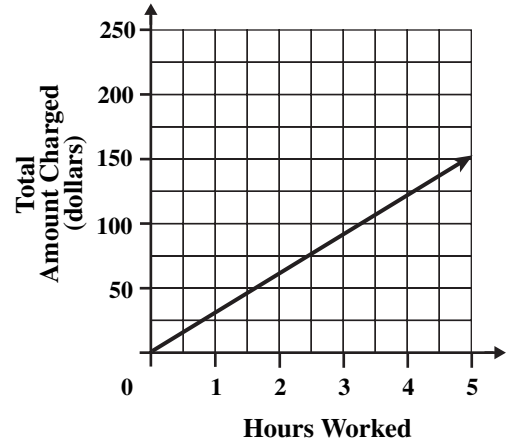
*Algebra and Functions*

80. Amy works as a computer consultant. She charges \$30 per hour for her work. Which graph shows the relationship between the number of hours Amy works and the amount of money she charges for her work?

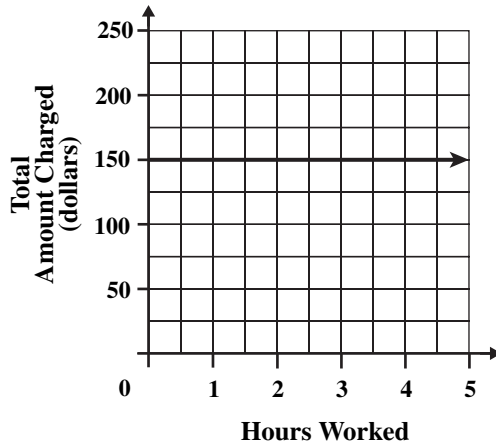
A



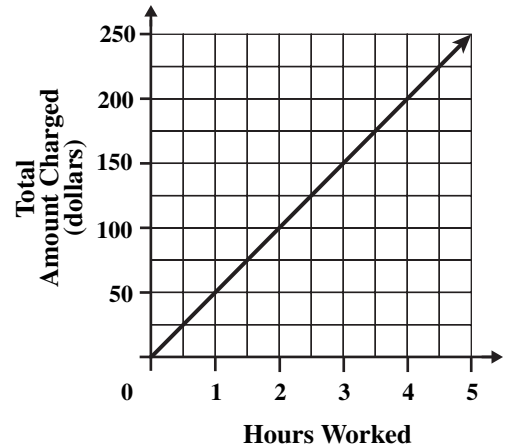
C



B



D



M21619

## Algebra and Functions

81.  $x^3y^3 =$

- A  $9xy$   
 B  $(xy)^6$   
 C  $3xy$   
 D  $xxxyyy$

M02879

82. What does  $x^5$  equal when  $x = -2$ ?

- A  $-32$   
 B  $-10$   
 C  $-\frac{1}{32}$   
 D  $32$

M12857

83. Which of the following is equivalent to  $(6x - 2)(6x - 2)(6x + 2)$ ?

- A  $(6x - 2)^3$   
 B  $(6x + 2)^3$   
 C  $2(6x - 2)(6x + 2)$   
 D  $(6x - 2)^2(6x + 2)$

M12845

84.  $\sqrt{4x^4} =$

- A  $2$   
 B  $2x$   
 C  $4x$   
 D  $2x^2$

M03067

85. Simplify the expression shown below.

$$(6a^4bc)(7ab^3c)$$

- A  $13a^4b^3c$   
 B  $13a^5b^4c^2$   
 C  $42a^4b^3c$   
 D  $42a^5b^4c^2$

M02109

86. Which expression is equivalent to  $7a^2b \cdot 7bc^2$ ?

- A  $14a^2b^2c^2$   
 B  $49a^2bc^2$   
 C  $49a^2b^2c^2$   
 D  $343a^2b^2c^2$

M12872

87. Which expression is equal to  $\sqrt{100a^2}$ ?

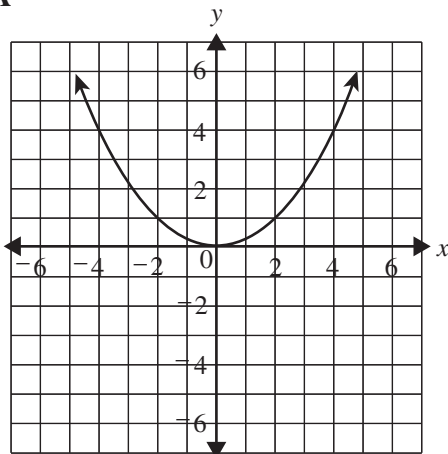
- A  $10a$   
 B  $50a$   
 C  $10a^2$   
 D  $50a^2$

M20646

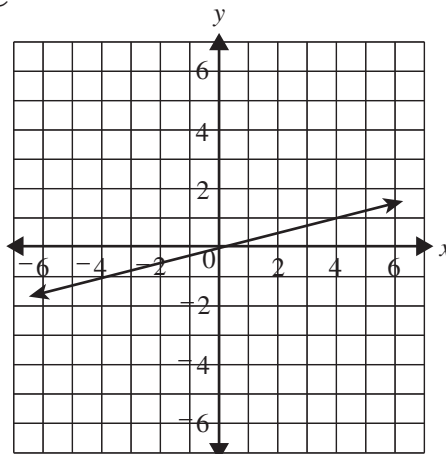
*Algebra and Functions*

88. Which of the following is the graph of  $y = \frac{1}{4}x^2$ ?

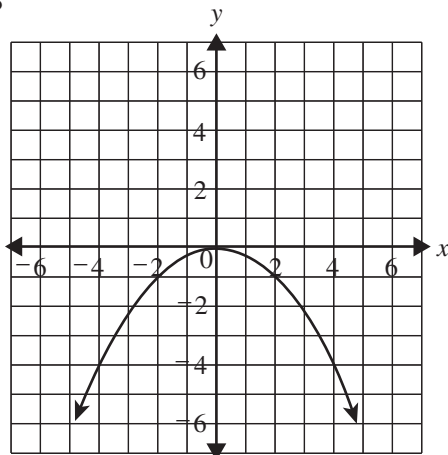
**A**



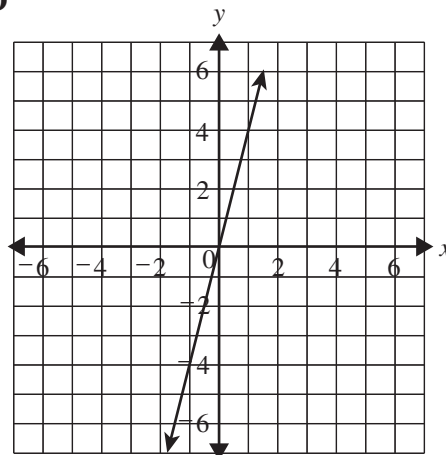
**C**



**B**



**D**

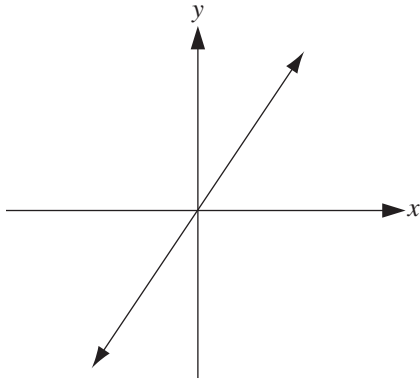


M03210

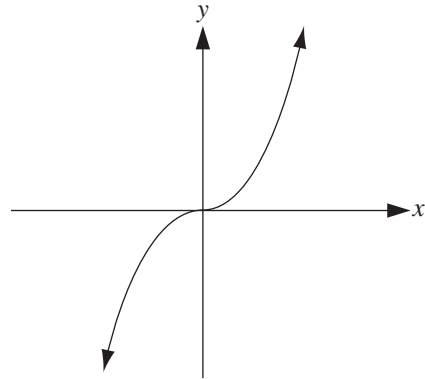
*Algebra and Functions*

89. Which of the following could be the graph of  $y = x^3$ ?

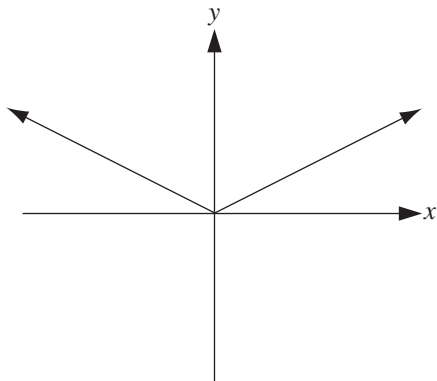
A



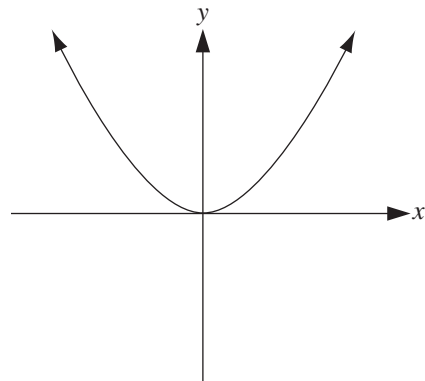
C



B



D

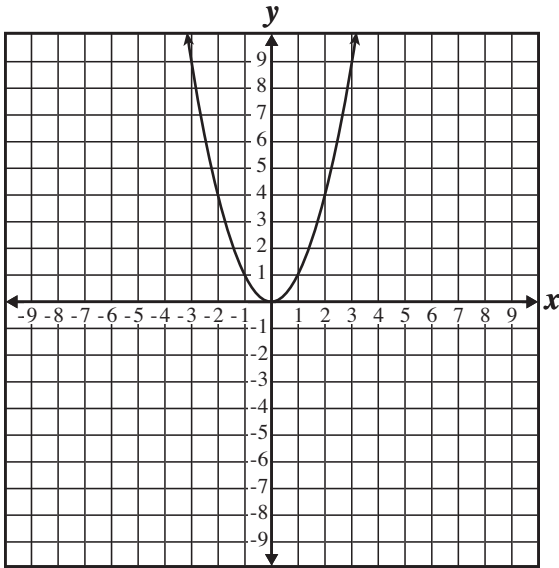


M02200

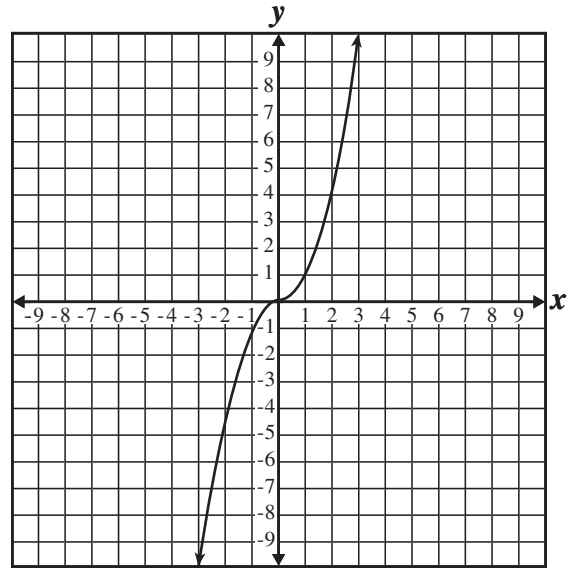
*Algebra and Functions*

90. Which graph represents the function  $y = -x^2$ ?

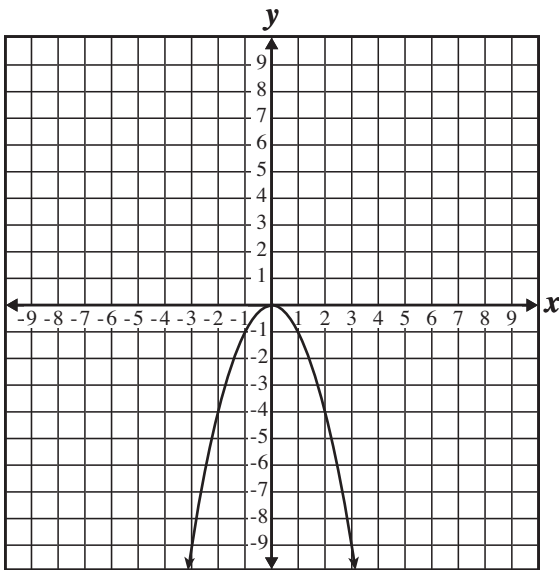
A



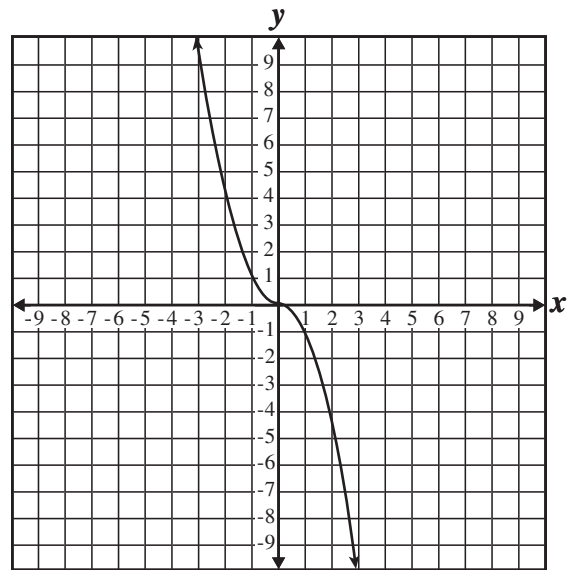
C



B



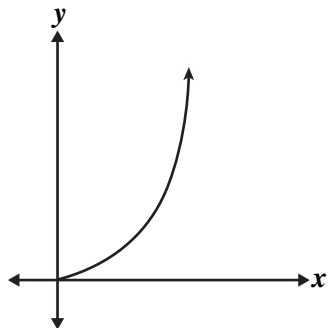
D



M13623

*Algebra and Functions*

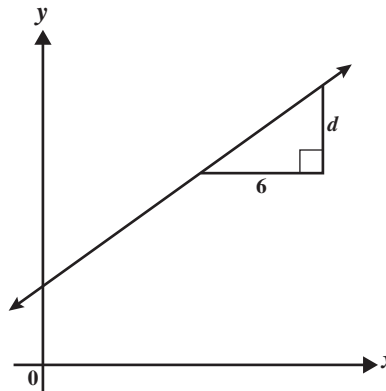
91. Which equation BEST represents the part of the graph shown below?



- A  $y = 1.75x$
- B  $y = 1.75x^2$
- C  $y = -1.75x$
- D  $y = -1.75x^2$

M10760

93. The slope of the line shown below is  $\frac{2}{3}$ .

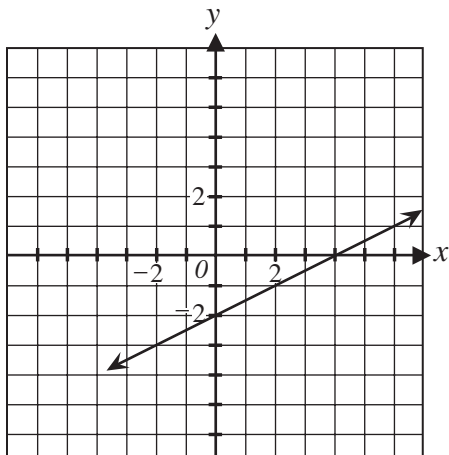


What is the value of  $d$ ?

- A 3
- B 4
- C 6
- D 9

M02078

92. What is the slope of the line shown in the graph above?



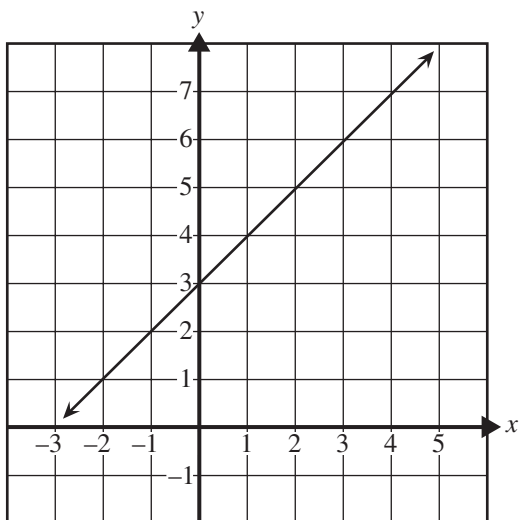
- A -2
- B  $-\frac{1}{2}$
- C  $\frac{1}{2}$
- D 2

M02556



*Algebra and Functions*

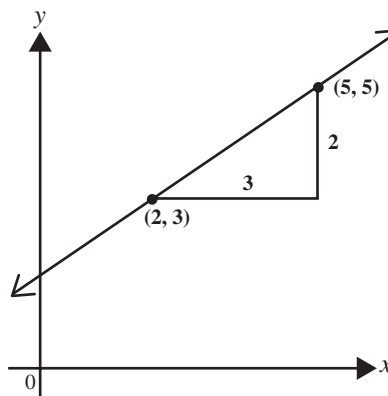
94. What is the equation of the graph shown below?



- A  $y = x - 1$
- B  $y = x + 1$
- C  $y = x + 3$
- D  $y = x - 3$

M02035

95. What is the slope of the line below?



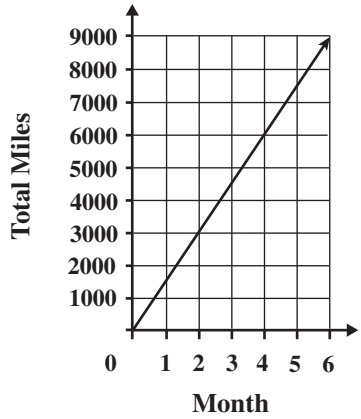
- A  $-\frac{3}{2}$
- B  $-\frac{2}{3}$
- C  $\frac{2}{3}$
- D  $\frac{3}{2}$

M02077

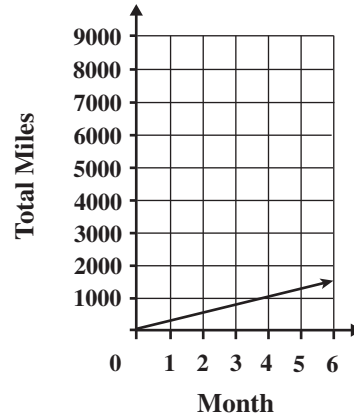
*Algebra and Functions*

96. Mario drives 1500 miles every month. Which line plot correctly represents Mario's total miles driven over a period of six months?

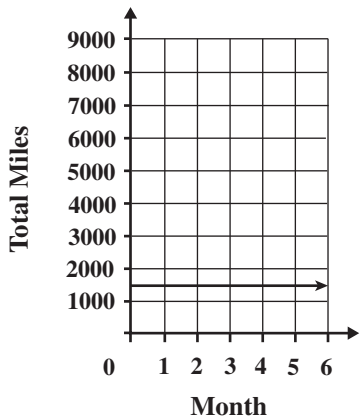
A



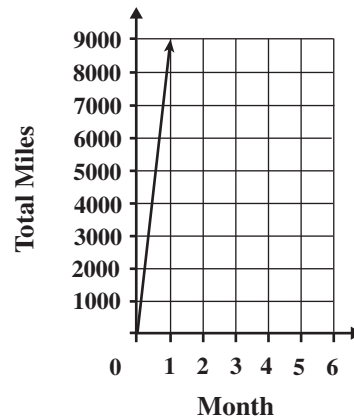
C



B



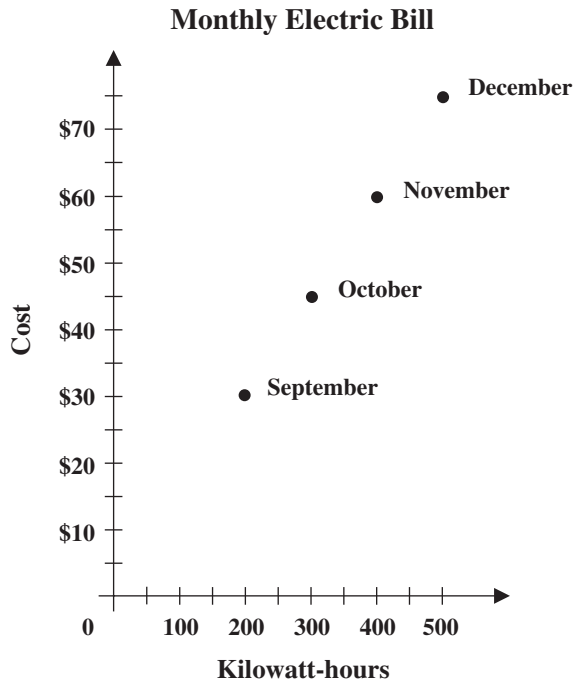
D



M11652

*Algebra and Functions*

97. The graph below shows Francine's electric bill for 4 different months. What is the price per kilowatt-hour of Francine's electricity?



- A \$0.15  
 B \$0.30  
 C \$1.50  
 D \$6.67

M02681

98. A grocery store sells 2 cans of soup for \$1.50. If this relationship is graphed with the number of cans on the  $x$ -axis and the cost on the  $y$ -axis, what is the slope of the graph in dollars per can?

- A 0.33  
 B 0.75  
 C 1.33  
 D 1.50

M11336

99. In the inequality  $2x + \$10,000 \geq \$70,000$ ,  $x$  represents the salary of an employee in a school district. Which phrase most accurately describes the employee's salary?

- A At least \$30,000  
 B At most \$30,000  
 C Less than \$30,000  
 D More than \$30,000

M02621

100. Solve for  $x$ .

$$2x - 3 = 7$$

- A -5  
 B -2  
 C 2  
 D 5

M02771

## Algebra and Functions

101. Solve for  $n$ .

$$2n + 3 < 17$$

- A  $n < 2$
- B  $n < 3$
- C  $n < 5$
- D  $n < 7$

M102040

102. The owner of an apple orchard ships apples in boxes that weigh 2 kilograms (kg) when empty. The average apple weighs 0.25 kg, and the total weight of a box filled with apples is 12 kg. How many apples are packed in each box?

- A 14
- B 40
- C 48
- D 56

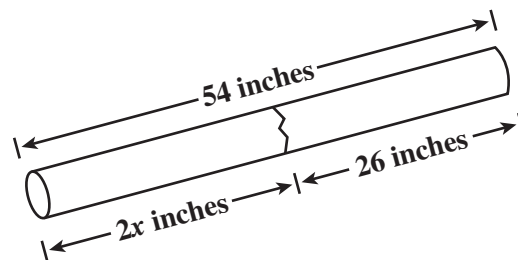
M10327

103. Brad bought a \$6 binder and several packs of paper that cost \$0.60 each. If his total was \$13.20, how many packs of paper did Brad buy?

- A 2
- B 6
- C 12
- D 22

M12223

104. A piece of pipe 54 inches in length is cut into two pieces as shown in the diagram below.



What is the value of  $x$ ?

- A 3
- B 14
- C 27
- D 40

M12175

105. Stephanie is reading a 456-page book. During the past 7 days she has read 168 pages. If she continues reading at the same rate, how many more days will it take her to complete the book?

- A 12
- B 14
- C 19
- D 24

M00380

106. Robert's toy car travels at 40 centimeters per second (cm/sec) at high speed and 15 cm/sec at low speed. If the car travels for 15 seconds at high speed and then 30 seconds at low speed, what distance would the car have traveled?

- A 1050 cm
- B 1200 cm
- C 1425 cm
- D 2475 cm

M10748

***Algebra and Functions***

**107.** Sara can ride her bicycle 3 miles in 15 minutes. At this rate, how many miles can she ride her bicycle in 50 minutes?

- A 5
- B 10
- C 15
- D 20

M12177

**108.** Lisa typed a 1000-word essay at an average rate of 20 words per minute. If she started typing at 6:20 p.m. and did not take any breaks, at what time did Lisa finish typing the essay?

- A 6:40 p.m.
- B 6:50 p.m.
- C 7:00 p.m.
- D 7:10 p.m.

M13652

*Algebra and Functions*

| Question Number | Correct Answer | Standard | School Year of Exam |
|-----------------|----------------|----------|---------------------|
| 69              | C              | 7AF1.1   | 2001–2002           |
| 70              | D              | 7AF1.1   | 2001–2002           |
| 71              | B              | 7AF1.1   | 2000–2001           |
| 72              | C              | 7AF1.1   | 2005–2006           |
| 73              | C              | 7AF1.1   | 2007–2008           |
| 74              | C              | 7AF1.2   | 2002–2003           |
| 75              | A              | 7AF1.2   | 2000–2001           |
| 76              | B              | 7AF1.2   | 2006–2007           |
| 77              | C              | 7AF1.5   | 2001–2002           |
| 78              | C              | 7AF1.5   | 2000–2001           |
| 79              | B              | 7AF1.5   | 2004–2005           |
| 80              | C              | 7AF1.5   | 2005–2006           |
| 81              | D              | 7AF2.1   | 2001–2002           |
| 82              | A              | 7AF2.1   | 2003–2004           |
| 83              | D              | 7AF2.1   | 2004–2005           |
| 84              | D              | 7AF2.2   | 2001–2002           |
| 85              | D              | 7AF2.2   | 2000–2001           |
| 86              | C              | 7AF2.2   | 2004–2005           |
| 87              | A              | 7AF2.2   | 2007–2008           |
| 88              | A              | 7AF3.1   | 2002–2003           |
| 89              | C              | 7AF3.1   | 2000–2001           |
| 90              | B              | 7AF3.1   | 2006–2007           |
| 91              | B              | 7AF3.1   | 2005–2006           |
| 92              | C              | 7AF3.3   | 2001–2002           |
| 93              | B              | 7AF3.3   | 2001–2002           |
| 94              | C              | 7AF3.3   | 2000–2001           |
| 95              | C              | 7AF3.3   | 2000–2001           |
| 96              | A              | 7AF3.4   | 2006–2007           |
| 97              | A              | 7AF3.4   | 2003–2004           |
| 98              | B              | 7AF3.4   | 2007–2008           |
| 99              | A              | 7AF4.1   | 2001–2002           |
| 100             | D              | 7AF4.1   | 2001–2002           |
| 101             | D              | 7AF4.1   | 2000–2001           |
| 102             | B              | 7AF4.1   | 2003–2004           |
| 103             | C              | 7AF4.1   | 2005–2006           |
| 104             | B              | 7AF4.1   | 2007–2008           |
| 105             | A              | 7AF4.2   | 2001–2002           |
| 106             | A              | 7AF4.2   | 2003–2004           |
| 107             | B              | 7AF4.2   | 2004–2005           |
| 108             | D              | 7AF4.2   | 2006–2007           |

**Measurement and Geometry**

|                         |  |
|-------------------------|--|
| <b>Standard Set 3.0</b> | <b>Students know the Pythagorean theorem and deepen their understanding of plane and solid geometric shapes by constructing figures that meet given conditions and by identifying attributes of figures:</b>   |
| 3.2                     | Understand and use coordinate graphs to plot simple figures, determine lengths and areas related to them, and determine their image under translations and reflections.  |
| 3.3                     | Know and understand the Pythagorean theorem and its converse and use it to find the length of the missing side of a right triangle and the lengths of other line segments and, in some situations, empirically verify the Pythagorean theorem by direct measurement. |
| 3.4                     | Demonstrate an understanding of conditions that indicate two geometrical figures are congruent and what congruence means about the relationships between the sides and angles of the two figures.  |

109. One millimeter is—

- A  $\frac{1}{1000}$  of a meter.
- B  $\frac{1}{100}$  of a meter.
- C 100 meters.
- D 1000 meters.

M00276

110. A boy is two meters tall. About how tall is the boy in feet (ft) and inches (in.)?  
(1 meter  $\approx$  39 inches)

- A 5 ft 0 in.
- B 5 ft 6 in.
- C 6 ft 0 in.
- D 6 ft 6 in.

M02044

## Measurement and Geometry

111. Juanita exercised for one hour. How many seconds did Juanita exercise?

- A 60
- B 120
- C 360
- D 3,600

M03074

112. If Jill is driving at 65 miles per hour, what is her approximate speed in kilometers per hour? (1 mile  $\approx$  1.6 kilometers)

- A 16
- B 41
- C 104
- D 173

M13251

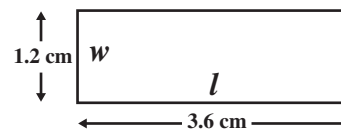
113. In Sacramento, the temperature at noon was  $35^\circ$  Celsius (C). What was the temperature in degrees Fahrenheit (F)?

$$\left( F = \frac{9}{5}C + 32 \right)$$

- A  $35^\circ$
- B  $63^\circ$
- C  $67^\circ$
- D  $95^\circ$

M02693

114. The actual width ( $w$ ) of a rectangle is 18 centimeters (cm). Use the scale drawing of the rectangle to find the actual length ( $l$ ).



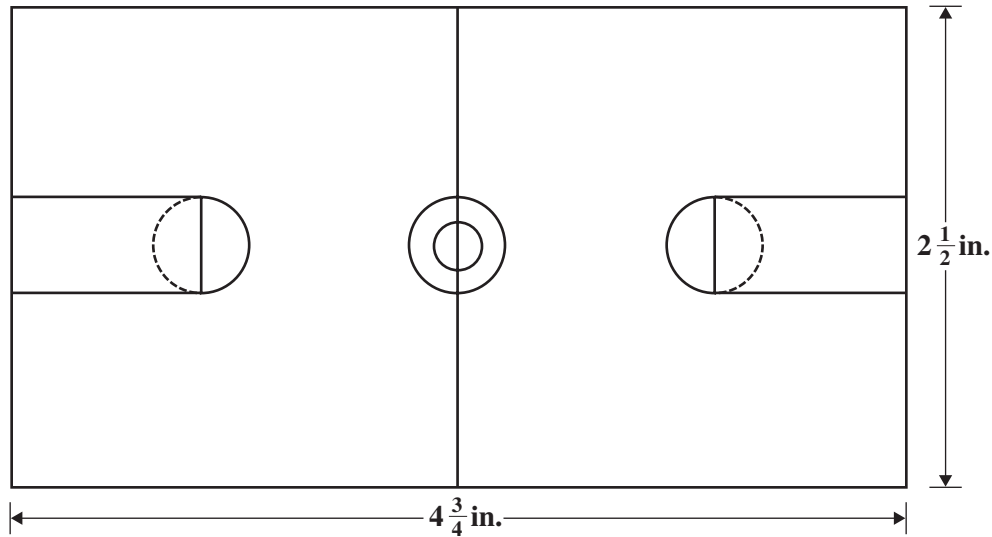
- A 6 cm
- B 24 cm
- C 36 cm
- D 54 cm

M02087



*Measurement and Geometry*

115. The scale drawing of the basketball court shown below is drawn using a scale of 1 inch (in.) = 24 feet (ft).



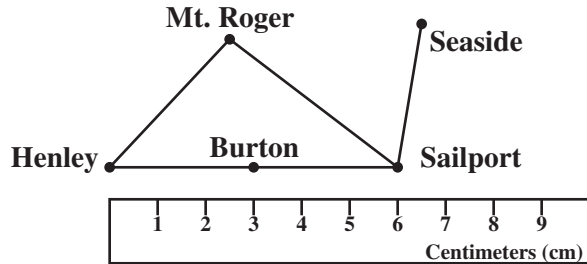
What is the length, in feet, of the basketball court?

- A 90 ft
- B 104 ft
- C 114 ft
- D 120 ft

M02233

*Measurement and Geometry*

116. Javier is using a ruler and a map to measure the distance from Henley to Sailport.

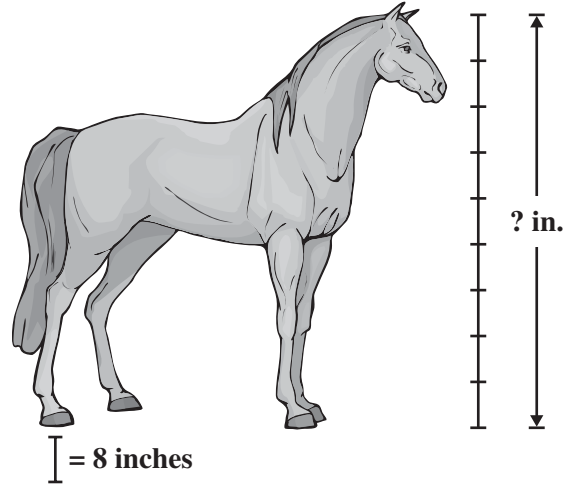


The actual distance from Henley to Sailport is 120 kilometers (km). What scale was used to create the map?

- A 1 cm = 6 km
- B 1 cm = 12 km
- C 1 cm = 15 km
- D 1 cm = 20 km

M21169

117. A scale drawing of a horse is shown below.



What is the actual height of the horse, in inches (in.), from the hoof to the top of the head?

- A 56
- B 64
- C 72
- D 80

M32040

118. Sixty miles per hour is the same rate as which of the following?

- A 1 mile per minute
- B 1 mile per second
- C 6 miles per minute
- D 360 miles per second

M02473

## Measurement and Geometry

119. Beverly ran six miles at the speed of four miles per hour. How long did it take her to run that distance?

A  $\frac{2}{3}$  hr  
 B  $1\frac{1}{2}$  hrs  
 C 4 hrs  
 D 6 hrs

M02041

120. Marcus can type about 42 words per minute. If he types at this rate for 30 minutes without stopping, about how many words will he type?

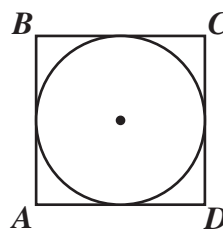
A 1260  
 B 2100  
 C 2520  
 D 4200

M21029

121. A landscaper estimates that landscaping a new park will take 1 person 48 hours. If 4 people work on the job and they each work 6-hour days, how many days are needed to complete the job?

A 2  
 B 4  
 C 6  
 D 8

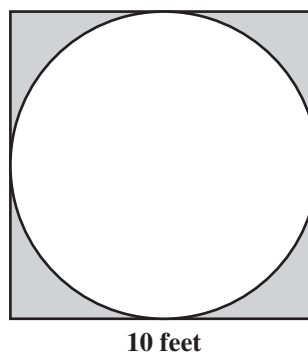
M11541



122. In the figure above, the radius of the inscribed circle is 6 inches (in.). What is the perimeter of square  $ABCD$ ?

A  $12\pi$  in.  
 B  $36\pi$  in.  
 C 24 in.  
 D 48 in.

M02236

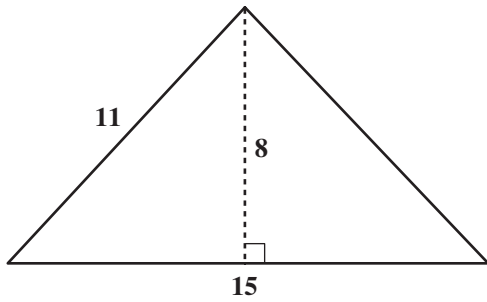


123. The largest possible circle is to be cut from a 10-foot square board. What will be the approximate area, in square feet, of the remaining board (shaded region)? ( $A = \pi r^2$  and  $\pi \approx 3.14$ )

A 20  
 B 30  
 C 50  
 D 80

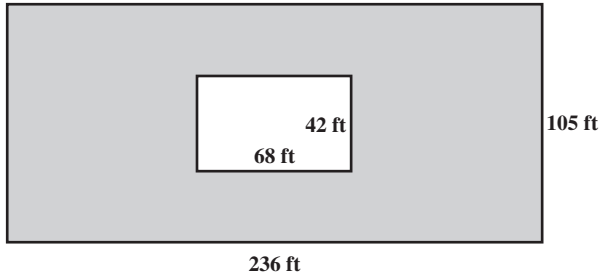
M00404

*Measurement and Geometry*



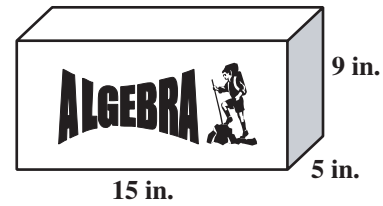
124. What is the area of the triangle shown above?
- A 44 square units
  - B 60 square units
  - C 88 square units
  - D 120 square units

M00101



125. A rectangular pool 42 feet by 68 feet is on a rectangular lot 105 feet by 236 feet. The rest of the lot is grass. Approximately how many square feet is grass?
- A 2,100
  - B 2,800
  - C 21,000
  - D 28,000

M00311

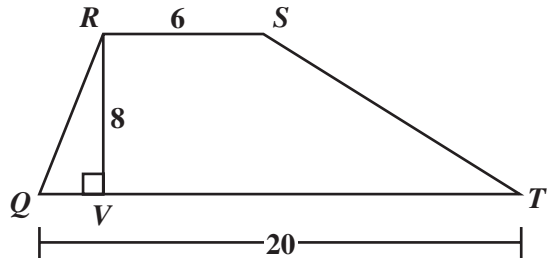


126. What is the volume of the shoebox shown above in cubic inches (in.<sup>3</sup>)?
- A 29
  - B 75
  - C 510
  - D 675

M02629

127. What is the area, in square units, of trapezoid  $QRST$  shown below?

$$\left[ A = \frac{1}{2} h(b_1 + b_2) \right]$$

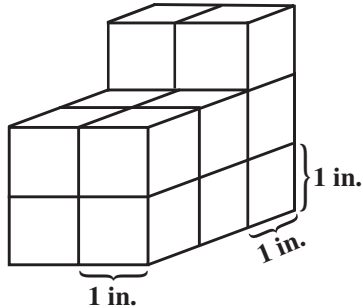


- A 68
- B 104
- C 208
- D 960

M12087

*Measurement and Geometry*

128. One-inch cubes are stacked as shown in the drawing below.

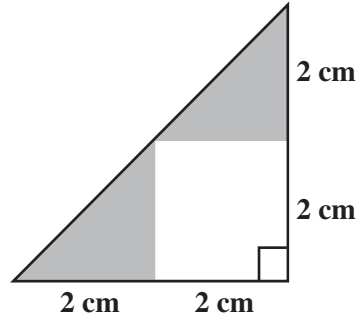


What is the total surface area?

- A 19 in.<sup>2</sup>
- B 29 in.<sup>2</sup>
- C 32 in.<sup>2</sup>
- D 38 in.<sup>2</sup>

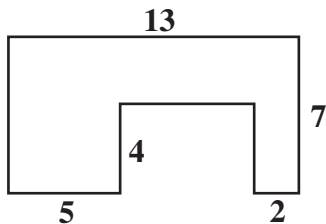
M02812

130. What is the area of the shaded region in the figure shown below?



- A 4 cm<sup>2</sup>
- B 6 cm<sup>2</sup>
- C 8 cm<sup>2</sup>
- D 16 cm<sup>2</sup>

M02814

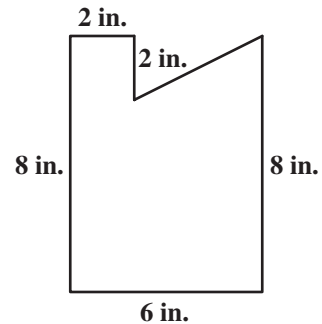


129. In the figure shown above, all the corners form right angles. What is the area of the figure in square units?

- A 67
- B 73
- C 78
- D 91

M00318

131. A right triangle is removed from a rectangle as shown in the figure below. Find the area of the remaining part of the rectangle.

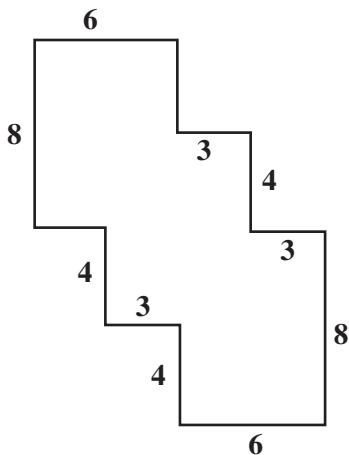


- A 40 in.<sup>2</sup>
- B 44 in.<sup>2</sup>
- C 48 in.<sup>2</sup>
- D 52 in.<sup>2</sup>

M02093

*Measurement and Geometry*

132. In the figure below, every angle is a right angle.

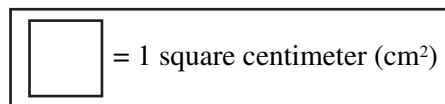
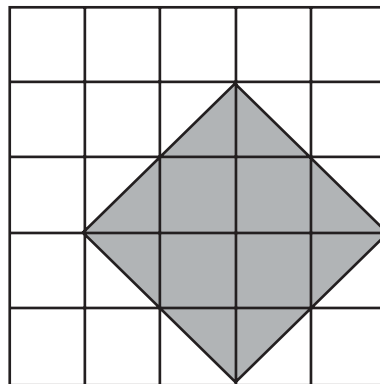


What is the area, in square units, of the figure?

- A 96
- B 108
- C 120
- D 144

M10790

133. What is the area of the shaded figure below?

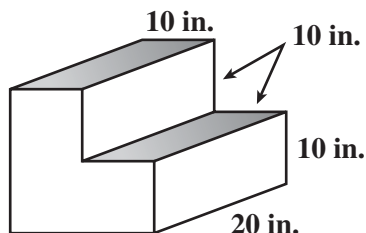


- A 8 cm<sup>2</sup>
- B 9 cm<sup>2</sup>
- C 10 cm<sup>2</sup>
- D 12 cm<sup>2</sup>

M13827

*Measurement and Geometry*

134. The short stairway shown below is made of solid concrete. The height and width of each step is 10 inches (in.). The length is 20 inches.



What is the volume, in cubic inches, of the concrete used to create this stairway?

- A 3000
- B 4000
- C 6000
- D 8000

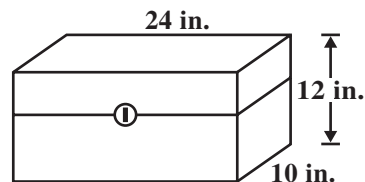
M02990

135. Bonni has two similar rectangular boxes. The dimensions of box 1 are twice those of box 2. How many times greater is the volume of box 1 than the volume of box 2?

- A 3
- B 6
- C 8
- D 9

M21061

136. Gina is painting the rectangular tool chest shown in the diagram below.



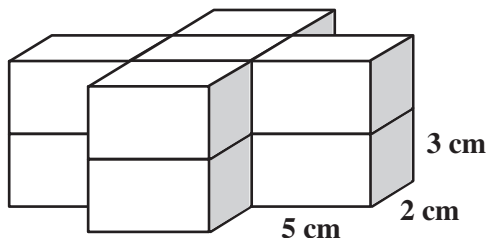
If Gina paints only the outside of the tool chest, what is the total surface area, in square inches ( $\text{in.}^2$ ), she will paint?

- A 368
- B 648
- C 1296
- D 2880

M20643

## Measurement and Geometry

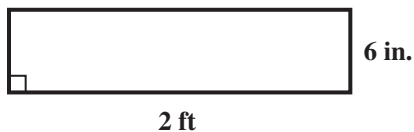
137. The object below is made of ten rectangular prisms, each with dimensions of 5 centimeters (cm) by 3 cm by 2 cm. What is the volume, in cubic centimeters, of the object?



- A 100  
B 150  
C 250  
D 300

M30226

138. The width of the rectangle shown below is 6 inches (in.). The length is 2 feet (ft).



What is the area of the rectangle in square inches?

- A 12  
B 16  
C 60  
D 144

M03243

139. One cubic inch is approximately equal to 16.38 cubic centimeters. Approximately how many cubic centimeters are there in 3 cubic inches?

- A 5.46  
B 13.38  
C 19.38  
D 49.14

M02700

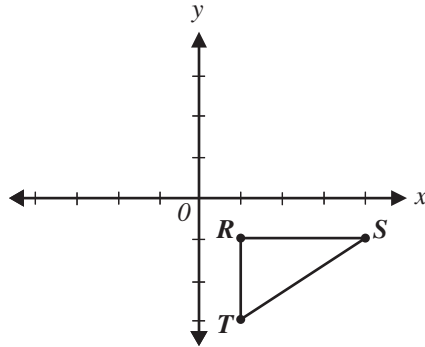
140. A rectangular field is 363 feet long and 240 feet wide. How many acres is the field? (1 acre = 43,560 square feet)

- A 2  
B 3  
C 4  
D 5

M13918

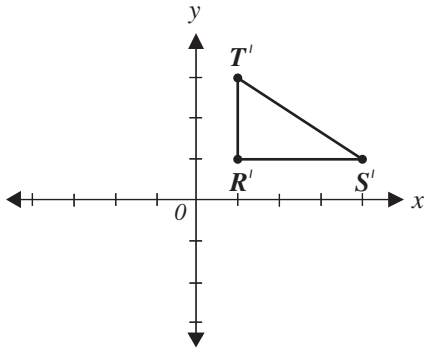


*Measurement and Geometry*

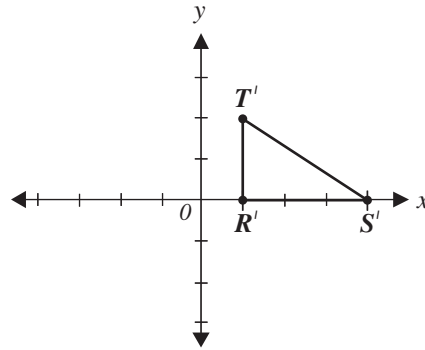


141. Which of the following triangles  $R'S'T'$  is the image of triangle  $RST$  that results from reflecting triangle  $RST$  across the  $y$ -axis?

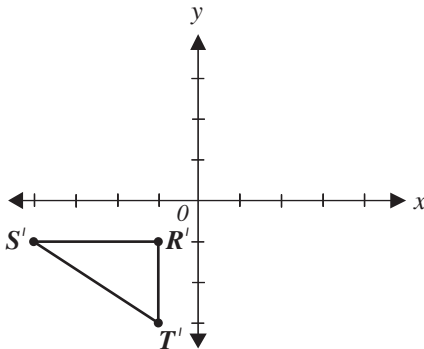
A



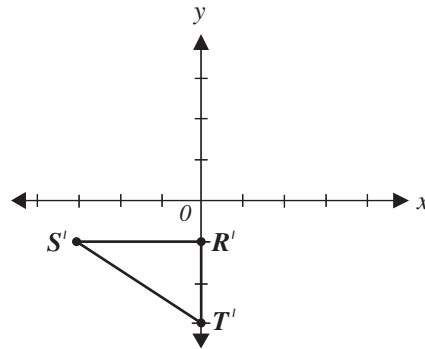
C



B



D



M02861

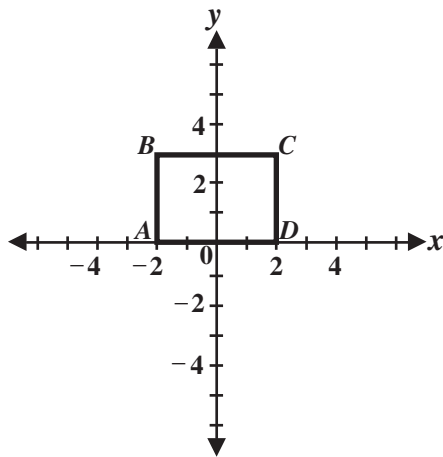
*Measurement and Geometry*

142. The points  $(1, 1)$ ,  $(2, 3)$ ,  $(4, 3)$ , and  $(5, 1)$  are the vertices of a polygon. What type of polygon is formed by these points?

- A Triangle
- B Trapezoid
- C Parallelogram
- D Pentagon

M02718

143. The graph of rectangle  $ABCD$  is shown below.

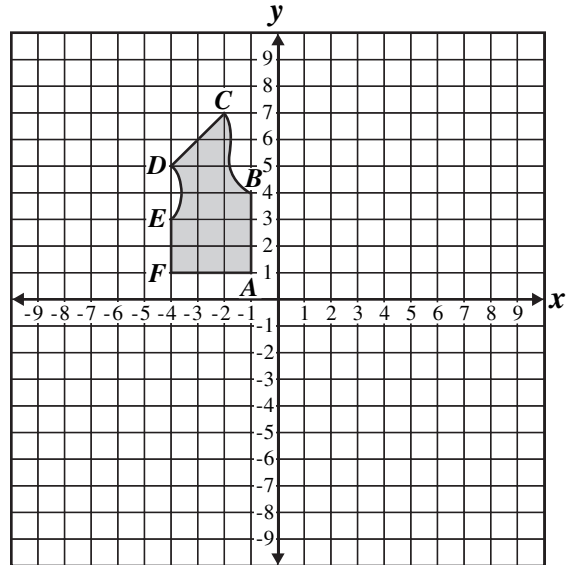


What is the area, in square units, of rectangle  $ABCD$ ?

- A 6
- B 10
- C 12
- D 14

M03136

144. A clothing company created the following diagram for a vest.

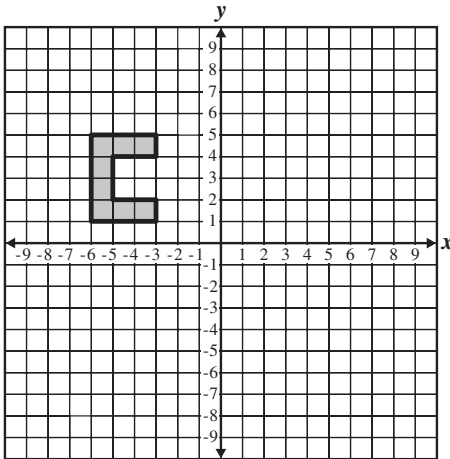


To show the other side of the vest, the company will reflect the drawing across the  $y$ -axis. What will be the coordinates of  $C$  after the reflection?

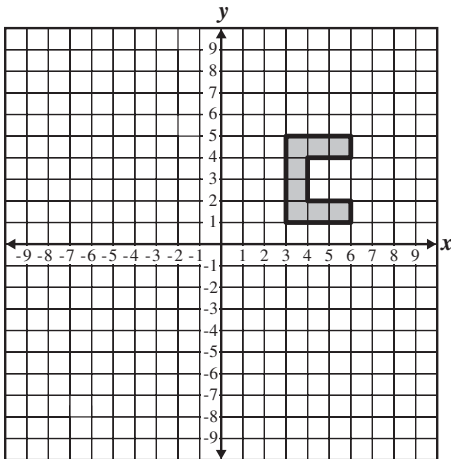
- A  $(2, 7)$
- B  $(7, 2)$
- C  $(-2, -7)$
- D  $(-2, 7)$

M10640

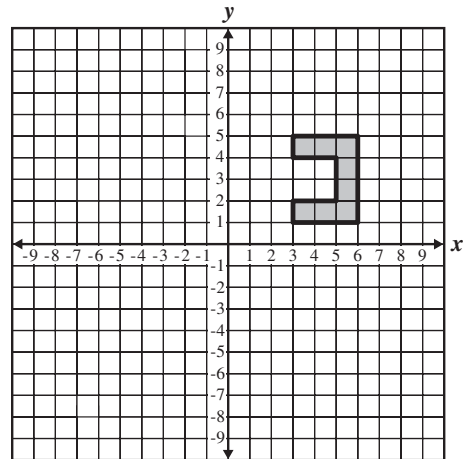
145. Which graph shows the figure below reflected across the  $y$ -axis?



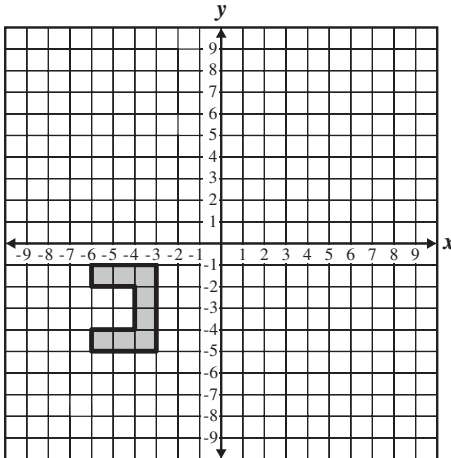
A



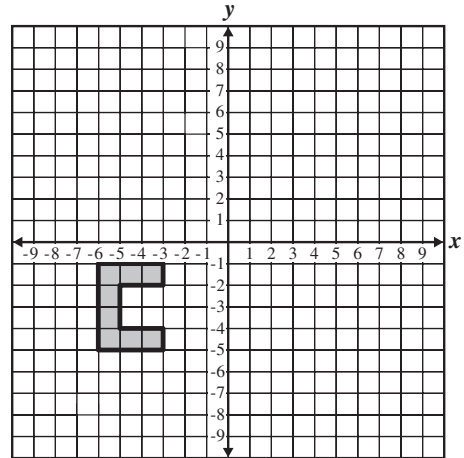
C



B

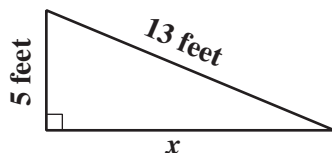


D



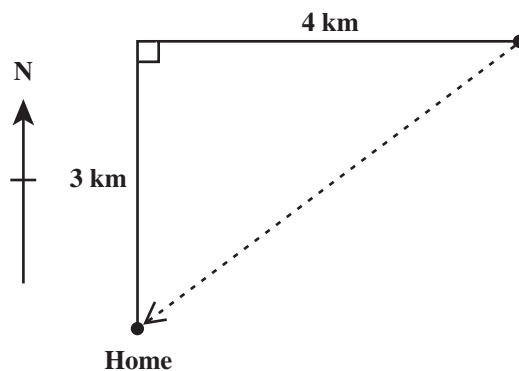
*Measurement and Geometry*

146. What is the value of  $x$  in the right triangle shown below?



- A 8 feet
- B 12 feet
- C 18 feet
- D 23 feet

M03181

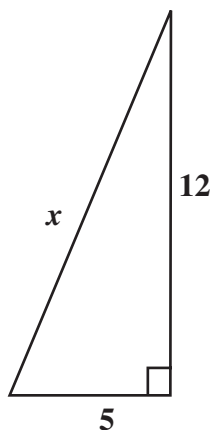


147. The club members hiked 3 kilometers north and 4 kilometers east, but then went directly home as shown by the dotted line. How far did they travel to get home?

- A 4 km
- B 5 km
- C 6 km
- D 7 km

M00120

## Measurement and Geometry

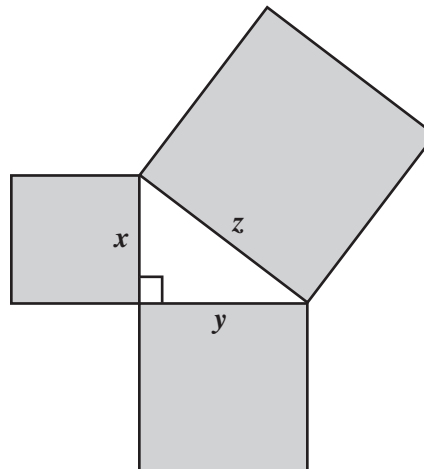


148. What is the value of  $x$  in the triangle shown above?

- A 11
- B 13
- C 17
- D 169

M02446

149. In the drawing below, the figure formed by the squares with sides that are labeled  $x$ ,  $y$ , and  $z$  is a right triangle.



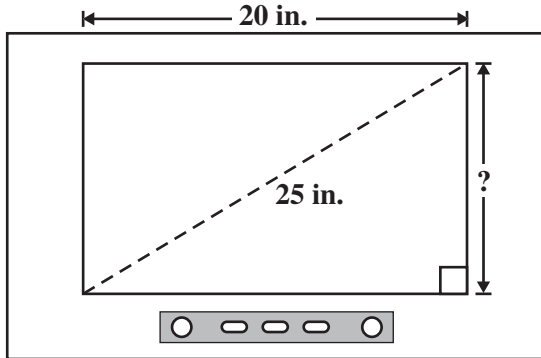
Which equation is true for all values of  $x$ ,  $y$ , and  $z$ ?

- A  $x + y = z$
- B  $x^2 + y^2 = z^2$
- C  $x^2 \cdot y^2 = z^2$
- D  $\frac{1}{2}xy = z$

M25150

*Measurement and Geometry*

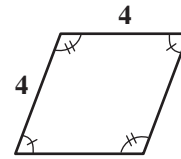
150. The size of a television screen is measured along its diagonal. A 25-inch (in.) television screen is shown below.



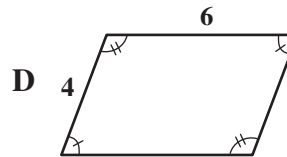
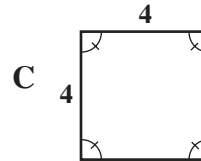
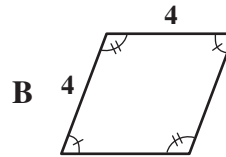
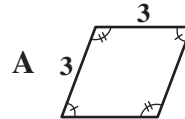
If the television screen shown above is 20 inches wide, what is the height, in inches, of the screen?

- A  $\sqrt{45}$
- B  $\sqrt{90}$
- C 10
- D 15

M32331



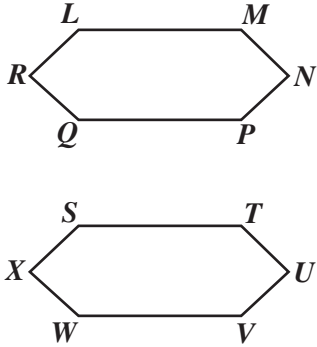
151. Which figure is congruent to the figure shown above?



M00020

*Measurement and Geometry*

152. In the diagram below, hexagon  $LMNPQR$  is congruent to hexagon  $STUVWX$ .

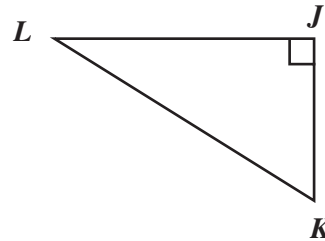
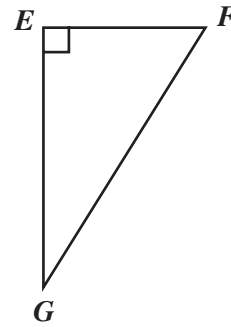


Which side is the same length as  $\overline{MN}$  ?

- A  $\overline{NP}$
- B  $\overline{TU}$
- C  $\overline{UV}$
- D  $\overline{WX}$

M13069

153. If triangles  $EFG$  and  $JKL$  are congruent, then which two segments **MUST** be congruent?



- A  $\overline{EF}$  and  $\overline{JK}$
- B  $\overline{EF}$  and  $\overline{JL}$
- C  $\overline{FG}$  and  $\overline{JK}$
- D  $\overline{FG}$  and  $\overline{JL}$

M25163

*Measurement and Geometry*

| Question Number | Correct Answer | Standard | School Year of Exam |
|-----------------|----------------|----------|---------------------|
| 109             | A              | 7MG1.1   | 2002–2003           |
| 110             | D              | 7MG1.1   | 2001–2002           |
| 111             | D              | 7MG1.1   | 2001–2002           |
| 112             | C              | 7MG1.1   | 2004–2005           |
| 113             | D              | 7MG1.1   | 2007–2008           |
| 114             | D              | 7MG1.2   | 2001–2002           |
| 115             | C              | 7MG1.2   | 2000–2001           |
| 116             | D              | 7MG1.2   | 2005–2006           |
| 117             | C              | 7MG1.2   | 2006–2007           |
| 118             | A              | 7MG1.3   | 2001–2002           |
| 119             | B              | 7MG1.3   | 2001–2002           |
| 120             | A              | 7MG1.3   | 2003–2004           |
| 121             | A              | 7MG1.3   | 2004–2005           |
| 122             | D              | 7MG2.1   | 2001–2002           |
| 123             | A              | 7MG2.1   | 2000–2001           |
| 124             | B              | 7MG2.1   | 2000–2001           |
| 125             | C              | 7MG2.1   | 2000–2001           |
| 126             | D              | 7MG2.1   | 2000–2001           |
| 127             | B              | 7MG2.1   | 2005–2006           |
| 128             | D              | 7MG2.2   | 2001–2002           |
| 129             | A              | 7MG2.2   | 2001–2002           |
| 130             | A              | 7MG2.2   | 2000–2001           |
| 131             | B              | 7MG2.2   | 2000–2001           |
| 132             | C              | 7MG2.2   | 2004–2005           |
| 133             | A              | 7MG2.2   | 2007–2008           |
| 134             | C              | 7MG2.3   | 2002–2003           |
| 135             | C              | 7MG2.3   | 2003–2004           |
| 136             | C              | 7MG2.3   | 2004–2005           |
| 137             | D              | 7MG2.3   | 2006–2007           |
| 138             | D              | 7MG2.4   | 2002–2003           |
| 139             | D              | 7MG2.4   | 2000–2001           |
| 140             | A              | 7MG2.4   | 2004–2005           |
| 141             | B              | 7MG3.2   | 2000–2001           |
| 142             | B              | 7MG3.2   | 2000–2001           |
| 143             | C              | 7MG3.2   | 2003–2004           |
| 144             | A              | 7MG3.2   | 2005–2006           |
| 145             | C              | 7MG3.2   | 2007–2008           |
| 146             | B              | 7MG3.3   | 2002–2003           |
| 147             | B              | 7MG3.3   | 2001–2002           |



***Measurement and Geometry***

| <b>Question Number</b> | <b>Correct Answer</b> | <b>Standard</b> | <b>School Year of Exam</b> |
|------------------------|-----------------------|-----------------|----------------------------|
| 148                    | B                     | 7MG3.3          | 2000–2001                  |
| 149                    | B                     | 7MG3.3          | 2005–2006                  |
| 150                    | D                     | 7MG3.3          | 2007–2008                  |
| 151                    | B                     | 7MG3.4          | 2001–2002                  |
| 152                    | B                     | 7MG3.4          | 2003–2004                  |
| 153                    | A                     | 7MG3.4          | 2006–2007                  |

## Mathematical Reasoning

154. Chris drove 100 kilometers from San Francisco to Santa Cruz in 2 hours and 30 minutes. What computation will give Chris' average speed, in kilometers per hour?

A Divide 100 by 2.5.  
 B Divide 100 by 2.3.  
 C Multiply 100 by 2.5.  
 D Multiply 100 by 2.3.

M03164

A flower shop delivery van traveled these distances during one week: 104.4, 117.8, 92.3, 168.7, and 225.6 miles. How many gallons of gas were used by the delivery van during this week?

155. What other information is needed in order to solve this problem?

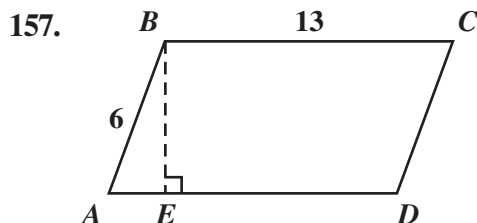
A The average speed traveled in miles per hour  
 B The cost of gasoline per gallon  
 C The average number of miles per gallon for the van  
 D The number of different deliveries the van made

M00138

156. A shipping company has 25 offices that shipped 60,000 packages last week. The offices were open 6 days and used 80,000 kilowatt-hours of electricity. Which pieces of information given above are necessary to find the average number of packages shipped per day last week?

A the number of offices and the number of packages  
 B the number of packages and the amount of electricity used  
 C the number of packages and the number of days open during the week  
 D the number of days open during the week and the amount of electricity used

M10538



What additional information is needed to find the area of parallelogram  $ABCD$ ? ( $A = bh$ )

A Length of  $\overline{CD}$   
 B Length of  $\overline{AD}$   
 C Length of  $\overline{BE}$   
 D Perimeter of the parallelogram

M00204

158. If  $n$  is any odd number, which of the following is true about  $n + 1$ ?

A It is an odd number.  
 B It is an even number.  
 C It is a prime number.  
 D It is the same number as  $n - 1$ .

M00155

## Mathematical Reasoning

159. The table below shows the flight times from San Francisco (S.F.) to New York (N.Y.).

| Leave S.F. Time | Arrive N.Y. Time |
|-----------------|------------------|
| 8:30 A.M.       | 4:50 P.M.        |
| 12:00 noon      | 8:25 P.M.        |
| 3:30 P.M.       | 11:40 P.M.       |
| 9:45 P.M.       | 5:50 A.M.        |

Which flight takes the longest?

- A The flight leaving at 8:30 A.M.  
 B The flight leaving at 12:00 noon  
 C The flight leaving at 3:30 P.M.  
 D The flight leaving at 9:45 P.M.

M00376

160. If  $a$  is a positive number and  $b$  is a negative number, which expression is always positive?

- A  $a - b$   
 B  $a + b$   
 C  $a \times b$   
 D  $a \div b$

M10683

161. Use the addition problems below to answer the question.

$$\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$$

$$\frac{1}{2} + \frac{1}{4} + \frac{1}{8} = \frac{7}{8}$$

$$\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} = \frac{15}{16}$$

$$\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \frac{1}{32} = \frac{31}{32}$$

Based on this pattern, what is the sum of

$$\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \dots + \frac{1}{1024}?$$

- A  $\frac{1001}{1024}$   
 B  $\frac{1010}{1024}$   
 C  $\frac{1023}{1024}$   
 D  $\frac{1025}{1024}$

M21115

**Mathematical Reasoning**

162. The table below shows the number of visitors to a natural history museum during a 4-day period.

| Day      | Number of Visitors |
|----------|--------------------|
| Friday   | 597                |
| Saturday | 1115               |
| Sunday   | 1346               |
| Monday   | 365                |

Which expression would give the BEST estimate of the total number of visitors during this period?

- A  $500 + 1100 + 1300 + 300$   
 B  $600 + 1100 + 1300 + 300$   
 C  $600 + 1100 + 1300 + 400$   
 D  $600 + 1100 + 1400 + 400$

M11112

163. Which is the BEST estimate of  $326 \cdot 279$ ?

- A 900  
 B 9,000  
 C 90,000  
 D 900,000

M00277

164. Marcus plans to buy a Compact Disc (CD) that has a regular price of \$13.99. It is on sale for 10% off, but Marcus will have to pay 7% sales tax. Which is the MOST reasonable estimate of the total cost of the CD including tax?

- A \$12.50  
 B \$13.50  
 C \$14.50  
 D \$15.50

M11869

165. The temperature on a mountain peak was 7 degrees Fahrenheit ( $^{\circ}\text{F}$ ) at 6:00 p.m. By 8:00 p.m., the temperature had dropped to  $0^{\circ}\text{F}$ . If the temperature continued to drop at about the same rate, which is the BEST estimate of the temperature at 11:00 p.m.?

- A  $-20^{\circ}\text{F}$   
 B  $-14^{\circ}\text{F}$   
 C  $-10^{\circ}\text{F}$   
 D  $-9^{\circ}\text{F}$

M20451

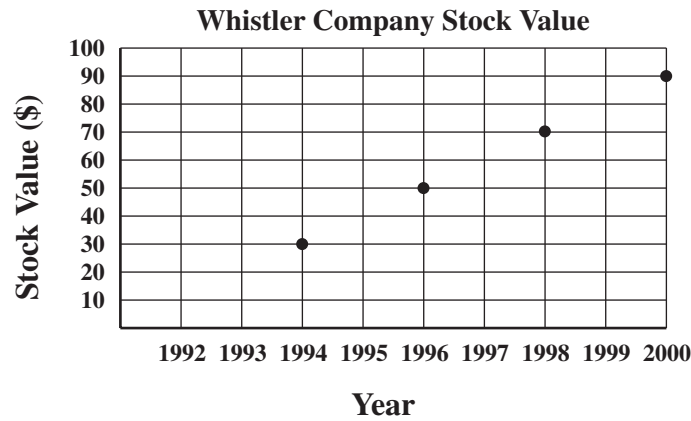
166. Sally paid \$1.89 for 5 plums. About how many plums would she get for \$10?

- A 4  
 B 5  
 C 10  
 D 25

M25031

**Mathematical Reasoning**

167. The graph below shows the value of Whistler Company stock at the end of every other year from 1994 to 2000.

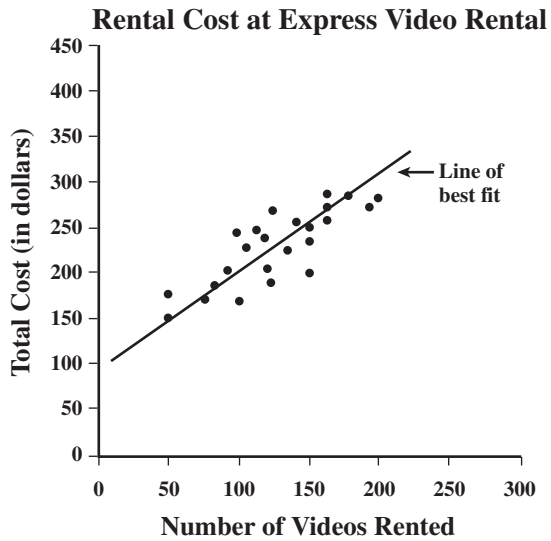


From this graph, which of the following was the most probable value of Whistler Company stock at the end of 1992?

- A    -\$10
- B    \$1
- C    \$10
- D    \$20

M02898

*Mathematical Reasoning*

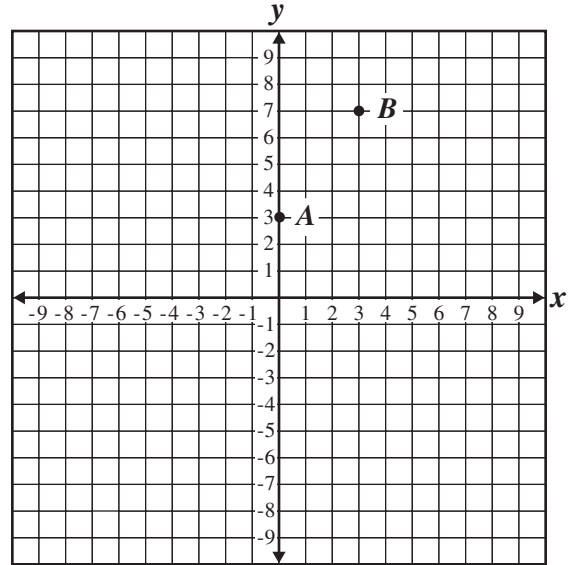


**168.** Using the line of best fit shown on the scatterplot above, which of the following best approximates the rental cost per video to rent 300 videos?

- A \$3.00
- B \$2.50
- C \$2.00
- D \$1.50

M02209

**169.** If a line passes through the points *A* and *B* shown below, approximately where does the line cross the *x*-axis?

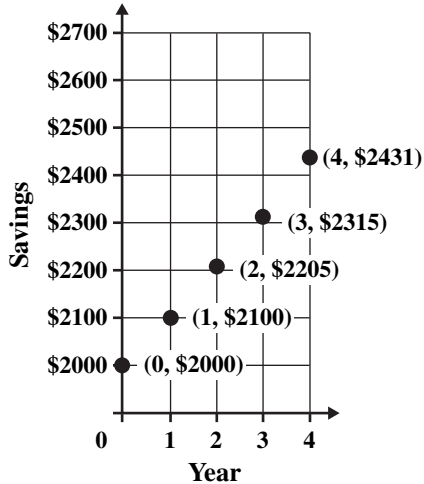


- A between  $-3$  and  $-2$
- B between  $0$  and  $-1$
- C between  $0$  and  $1$
- D between  $1$  and  $2$

M10702

## Mathematical Reasoning

170. The graph below shows the amount of money in one of Marie's savings accounts over several years.



If Marie's savings continue to grow at the same rate as shown in the graph, how much money will she have saved by year 5 in this account?

- A \$2531
- B \$2553
- C \$2862
- D \$3645

M32339

171. The table below shows values for  $x$  and corresponding values for  $y$ .

| $x$ | $y$ |
|-----|-----|
| 21  | 3   |
| 14  | 2   |
| 28  | 4   |
| 7   | 1   |

Which of the following represents the relationship between  $x$  and  $y$ ?

- A  $y = \frac{1}{7}x$
- B  $y = 7x$
- C  $y = x - 6$
- D  $y = x - 18$

M00377

**Mathematical Reasoning**

172. Michelle read a book review and predicted that the number of girls who will like the book will be more than twice the number of boys who will like the book. Which table shows data that support her prediction?

A

|       | Number Who Liked the Book |
|-------|---------------------------|
| Boys  | 35                        |
| Girls | 40                        |

C

|       | Number Who Liked the Book |
|-------|---------------------------|
| Boys  | 70                        |
| Girls | 25                        |

B

|       | Number Who Liked the Book |
|-------|---------------------------|
| Boys  | 35                        |
| Girls | 80                        |

D

|       | Number Who Liked the Book |
|-------|---------------------------|
| Boys  | 40                        |
| Girls | 40                        |

M11882



## Mathematical Reasoning

173. The winning number in a contest was less than 50. It was a multiple of 3, 5, and 6. What was the number?

- A 14
- B 15
- C 30
- D It cannot be determined.

M00393

174. Lia used the following process to find the slope of the line described by the equation  $3y + 5x = 12$ .

Step 1: Subtract  $5x$  from each side.  $3y = -5x + 12$

Step 2: Divide each side by 3.  $y = -\frac{5}{3}x + 4$

Step 3: The slope of  $y = mx + b$  is  $m$ . Slope is  $-\frac{5}{3}$

According to Lia's method, which expression gives the slope of the line described by the equation  $ax + by = c$ ?

- A  $-\frac{a}{b}$
- B  $\frac{a}{b}$
- C  $-\frac{b}{a}$
- D  $\frac{b}{a}$

M11892

Len runs a mile in 8 minutes. At this rate how long will it take him to run a 26-mile marathon?

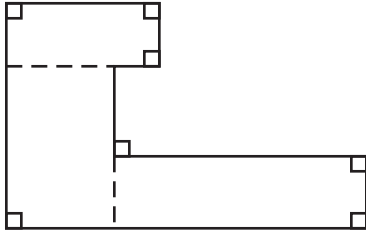
175. Which of the following problems can be solved using the same arithmetic operations that are used to solve the problem above?

- A Len runs 26 miles in 220 minutes. How long does it take him to run each mile?
- B A librarian has 356 books to place on 18 shelves. Each shelf will contain the same number of books. How many books can the librarian place on each shelf?
- C A cracker box weighs 200 grams. What is the weight of 100 boxes?
- D Each basket of strawberries weighs 60 grams. How many baskets can be filled from 500 grams of strawberries?

M00137

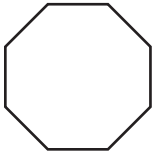
*Mathematical Reasoning*

176. Mia found the area of this shape by dividing it into rectangles as shown.

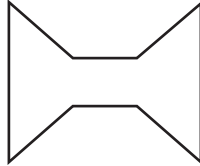


Mia could use the same method to find the area for which of these shapes?

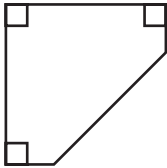
A



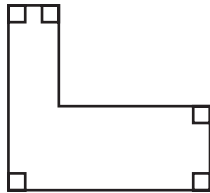
C



B



D



M25128

177. Read the problem and solution in the box below.

**Problem:** Find the value of  $|6| + |-6|$ .

**Solution:**  $|6| + |-6| = 6 + 6 = 12$

Use the same method to solve the following problem.

If  $x$  is a positive real number, what is the value of  $|x| + |-x|$ ?

- A  $-2x$
- B  $-x$
- C  $0$
- D  $2x$

M30209

**Mathematical Reasoning**

| Question Number | Correct Answer | Standard 1 | Standard 2 | School Year of Exam |
|-----------------|----------------|------------|------------|---------------------|
| 154             | A              | 7MR1.1     | 7MG1.3     | 2001–2002           |
| 155             | C              | 7MR1.1     | 7NS1.2     | 2000–2001           |
| 156             | C              | 7MR1.1     | 7MG1.3     | 2005–2006           |
| 157             | C              | 7MR1.1     | 7MG2.1     | 2006–2007           |
| 158             | B              | 7MR1.2     | 7AF1.1     | 2001–2002           |
| 159             | B              | 7MR1.2     | 7MG1.1     | 2000–2001           |
| 160             | A              | 7MR1.2     | 7AF1.1     | 2003–2004           |
| 161             | C              | 7MR1.2     | 7NS1.2     | 2005–2006           |
| 162             | C              | 7MR2.1     | 7NS1.2     | 2002–2003           |
| 163             | C              | 7MR2.1     | 7NS1.2     | 2000–2001           |
| 164             | B              | 7MR2.1     | 7NS1.7     | 2003–2004           |
| 165             | C              | 7MR2.1     | 7AF4.2     | 2004–2005           |
| 166             | D              | 7MR2.1     | 7AF4.2     | 2005–2006           |
| 167             | C              | 7MR2.3     | 7AF1.5     | 2000–2001           |
| 168             | D              | 7MR2.3     | 7PS1.2     | 2001–2002           |
| 169             | A              | 7MR2.3     | 7AF3.3     | 2004–2005           |
| 170             | B              | 7MR2.3     | 7AF3.4     | 2007–2008           |
| 171             | A              | 7MR2.4     | 7AF1.1     | 2002–2003           |
| 172             | B              | 7MR2.4     | 6PS2.5     | 2006–2007           |
| 173             | C              | 7MR2.4     | 7NS1.2     | 2000–2001           |
| 174             | A              | 7MR3.3     | 7AF4.1     | 2002–2003           |
| 175             | C              | 7MR3.3     | 7NS1.2     | 2001–2002           |
| 176             | D              | 7MR3.3     | 7MG2.2     | 2004–2005           |
| 177             | D              | 7MR3.3     | 7NS2.5     | 2007–2008           |

## Algebra I

178. If  $x = -7$ , then  $-x =$

A  $-7$

B  $-\frac{1}{7}$

C  $\frac{1}{7}$

D  $7$

M02863

179. The perimeter,  $P$ , of a square may be found by using the formula  $\left(\frac{1}{4}\right)P = \sqrt{A}$ , where  $A$  is the area of the square. What is the perimeter of the square with an area of 36 square inches?

A 9 inches

B 12 inches

C 24 inches

D 72 inches

M00057

180. What is the reciprocal of  $\frac{ax^2}{y}$ ?

A  $-\frac{ax^2}{y}$

B  $-\frac{y}{ax^2}$

C  $\frac{ax^2}{y}$

D  $\frac{y}{ax^2}$

M13174

181. If  $x$  is an integer, what is the solution to  $|x - 3| < 1$ ?

A  $\{-3\}$

B  $\{-3, -2, -1, 0, 1\}$

C  $\{3\}$

D  $\{-1, 0, 1, 2, 3\}$

M03035

182. If  $x$  is an integer, which of the following is the solution set for  $3|x| = 15$ ?

A  $\{0, 5\}$

B  $\{-5, 5\}$

C  $\{-5, 0, 5\}$

D  $\{0, 45\}$

M00059

183. What are all the possible values of  $x$  such that  $10|x| = 2.5$ ?

A 0.25 and  $-0.25$

B 4 and  $-4$

C 4.5 and  $-4.5$

D 25 and  $-25$

M12992

## Algebra I

184. Which of the following is equivalent to  $4(x + 5) - 3(x + 2) = 14$ ?

- A  $4x + 20 - 3x - 6 = 14$
- B  $4x + 5 - 3x + 6 = 14$
- C  $4x + 5 - 3x + 2 = 14$
- D  $4x + 20 - 3x - 2 = 14$

M02936

187. Which of the following is equivalent to  $1 - 2x > 3(x - 2)$ ?

- A  $1 - 2x > 3x - 2$
- B  $1 - 2x > 3x - 5$
- C  $1 - 2x > 3x - 6$
- D  $1 - 2x > 3x - 7$

M02231

185. Which of the following is equivalent to  $9 - 3x > 4(2x - 1)$ ?

- A  $13 < 11x$
- B  $13 > 11x$
- C  $10 > 11x$
- D  $6x > 0$

M02531

188. Which equation is equivalent to  $\frac{x + 3}{8} = \frac{2x - 1}{5}$ ?

- A  $5x + 3 = 16x - 1$
- B  $5x + 15 = 16x - 8$
- C  $8x + 3 = 10x - 1$
- D  $8x + 24 = 10x - 5$

M13117

$$\frac{20}{x} = \frac{4}{x - 5}$$

186. Which of the following is equivalent to the equation shown above?

- A  $x(x - 5) = 80$
- B  $20(x - 5) = 4x$
- C  $20x = 4(x - 5)$
- D  $24 = x + (x - 5)$

M02403

189. Which equation is equivalent to  $2x + 2 - 4x = 6(x - 2)$ ?

- A  $-2x + 2 = 6x - 12$
- B  $-2x + 2 = 6x - 2$
- C  $2x + 2 = 6x - 12$
- D  $2x + 2 = 6x - 2$

M13109

## Algebra I

190. Colleen solved the equation  $2(2x + 5) = 8$  using the following steps.

Given:  $2(2x + 5) = 8$

Step 1:  $4x + 10 = 8$

Step 2:  $4x = -2$

Step 3:  $x = -\frac{1}{2}$

To get from Step 2 to Step 3, Colleen—

- A divided both sides by 4.
- B subtracted 4 from both sides.
- C added 4 to both sides.
- D multiplied both sides by 4.

M03139

191. Solve for  $x$ .

$$5(2x - 3) - 6x < 9$$

- A  $x < -1.5$
- B  $x < 1.5$
- C  $x < 3$
- D  $x < 6$

M02938

192. Which inequality represents the solution of  $(11x + 2) + (6x + 4) + (x + 5) > 90$ ?

A  $x > \frac{79}{18}$

B  $x > \frac{79}{17}$

C  $x > \frac{101}{18}$

D  $x > \frac{101}{17}$

M20669

193. What is the  $y$ -intercept of the line  $2x - 3y = 12$ ?

A  $(0, -4)$

B  $(0, -3)$

C  $(2, 0)$

D  $(6, 0)$

M02591

194. What are the coordinates of the  $x$ -intercept of the line  $3x + 4y = 12$ ?

A  $(0, 3)$

B  $(3, 0)$

C  $(0, 4)$

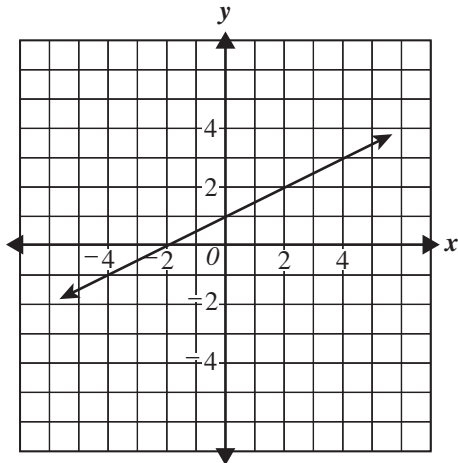
D  $(4, 0)$

M02462

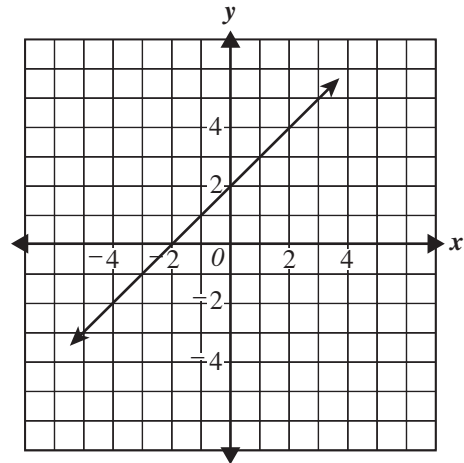
*Algebra I*

195. Which of the following is the graph of  $y = \frac{1}{2}x + 2$ ?

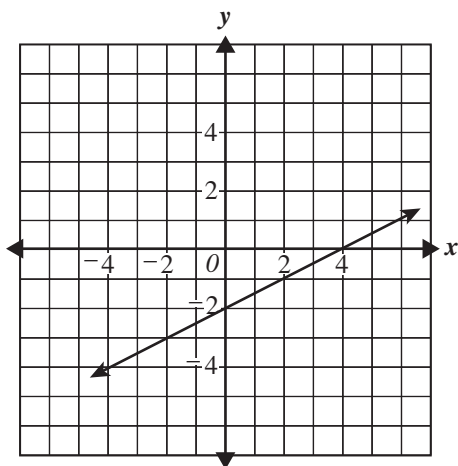
A



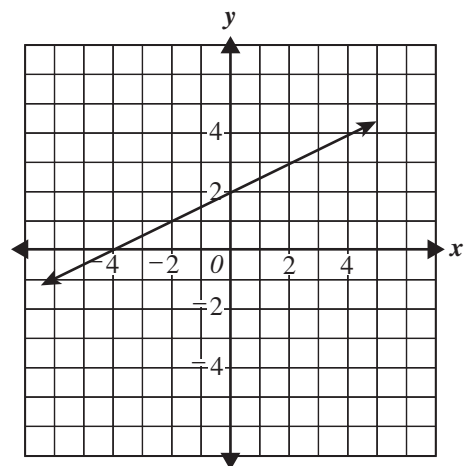
C



B



D

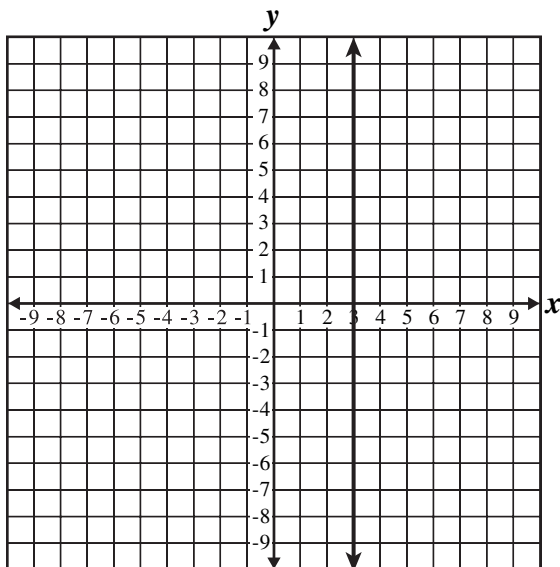


M02026

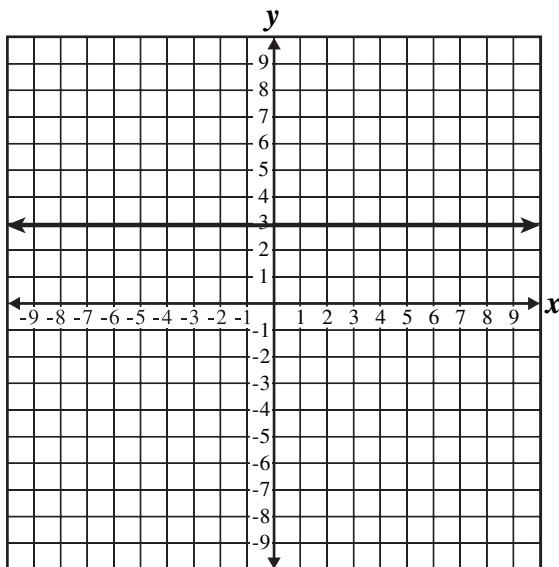
*Algebra I*

196. What is the graph of the equation  $x = 3$ ?

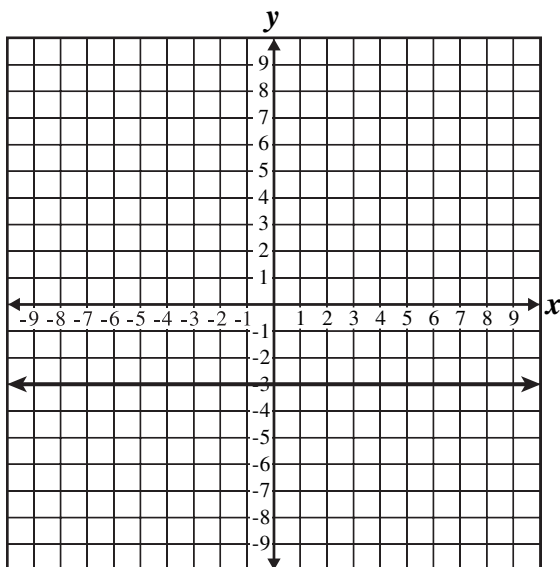
A



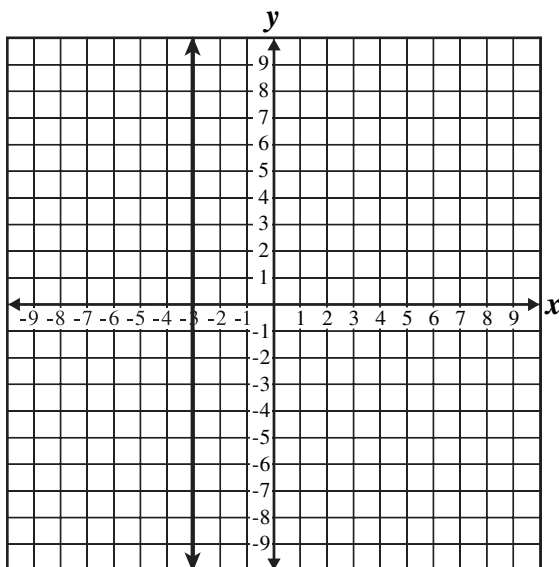
C



B



D



M13541



## Algebra I

197. What is the  $y$ -intercept of the line represented by the equation  $x + 4y = 3$ ?

- A  $\frac{3}{4}$
- B  $\frac{4}{3}$
- C 3
- D 4

M21492

198. Which of the following points lies on the line  $y = x$ ?

- A  $(-4, -4)$
- B  $(-4, 4)$
- C  $(4, -4)$
- D  $(-4, 0)$

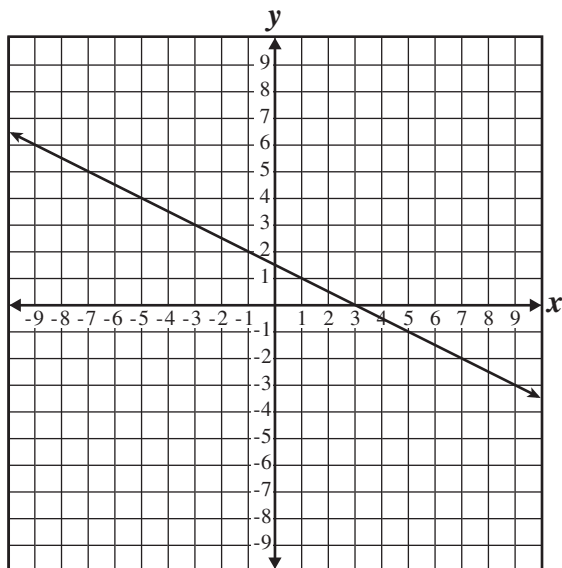
M02594

199. Which of the following points lies on the line  $4x + 5y = 20$ ?

- A  $(0, 4)$
- B  $(0, 5)$
- C  $(4, 5)$
- D  $(5, 4)$

M02565

200. Which equation represents the line on the graph below?



- A  $x + 2y = 3$
- B  $x + 2y = 5$
- C  $2x + y = 9$
- D  $4x + 2y = 3$

M22072

**Algebra I**

201. What is the slope of a line parallel to the

line  $y = \frac{1}{3}x + 2$ ?

A  $-3$

B  $-\frac{1}{3}$

C  $\frac{1}{3}$

D  $2$

M02653

202. Which of the following statements describes parallel lines?

A Same  $y$ -intercept but different slopes

B Same slope but different  $y$ -intercepts

C Opposite slopes but same  $x$ -intercepts

D Opposite  $x$ -intercepts but same  $y$ -intercept

M02610

203. Which of the following could be the equation of a line parallel to the line  $y = 4x - 7$ ?

A  $y = \frac{1}{4}x - 7$

B  $y = 4x + 3$

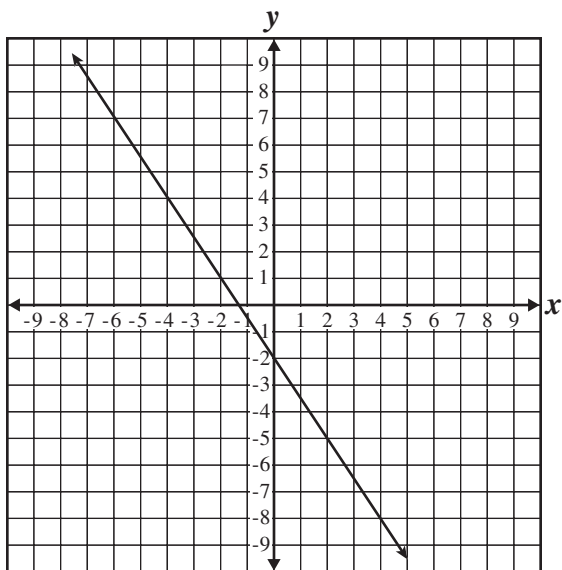
C  $y = -4x + 3$

D  $y = -\frac{1}{4}x - 7$

M02651

## Algebra I

204. What is the slope of a line parallel to the line below?



- A  $-\frac{3}{2}$   
 B  $-\frac{2}{3}$   
 C  $\frac{2}{3}$   
 D  $\frac{3}{2}$

M12410

$$\begin{cases} 7x + 3y = -8 \\ -4x - y = 6 \end{cases}$$

205. What is the solution to the system of equations shown above?

- A  $(-2, -2)$   
 B  $(-2, 2)$   
 C  $(2, -2)$   
 D  $(2, 2)$

M02956

$$\begin{cases} y = 3x - 5 \\ y = 2x \end{cases}$$

206. What is the solution of the system of equations shown above?

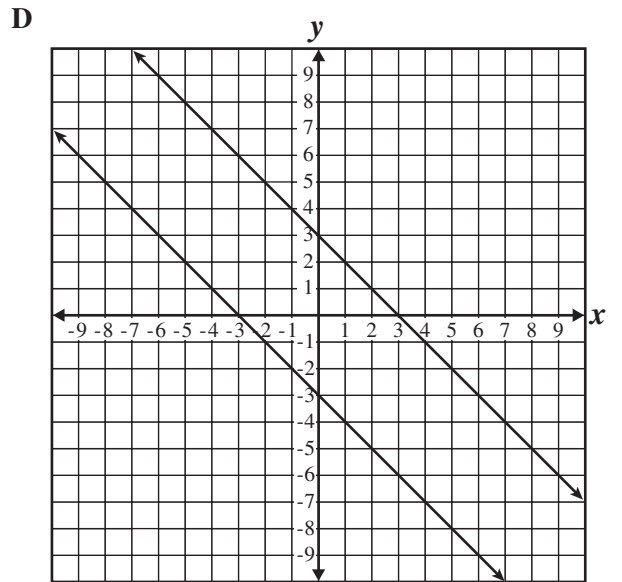
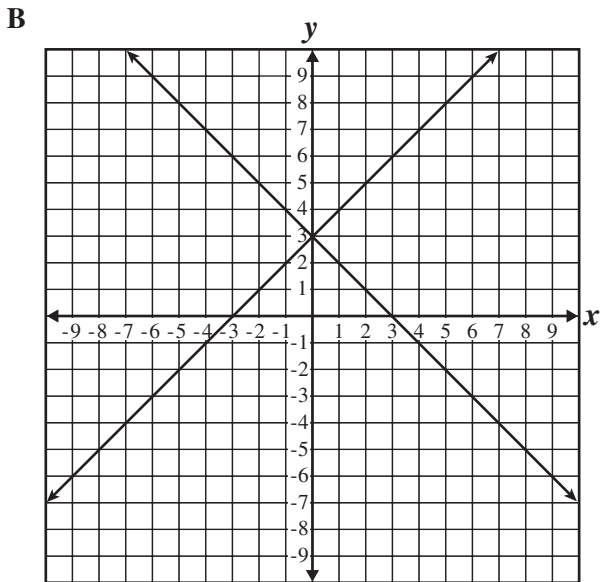
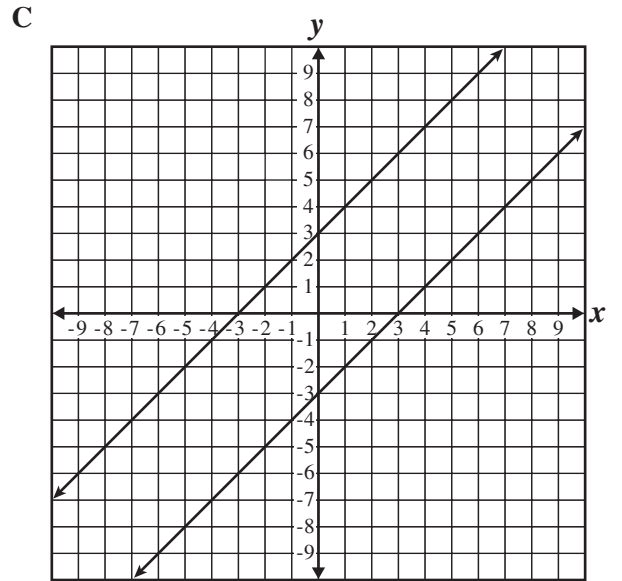
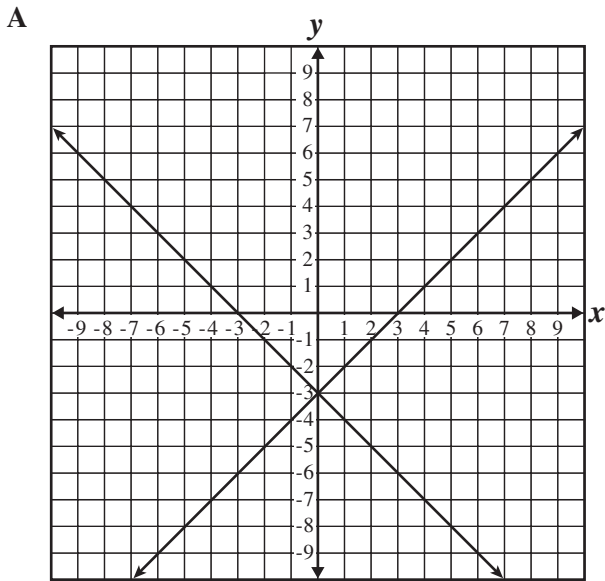
- A  $(1, -2)$   
 B  $(1, 2)$   
 C  $(5, 10)$   
 D  $(-5, -10)$

M02649

*Algebra I*

207. Which graph represents the system of equations shown below?

|                          |
|--------------------------|
| $y = -x + 3$ $y = x + 3$ |
|--------------------------|



M12449

## Algebra I

208. What is the  $x$ -coordinate of the solution to the following pair of equations?

$$\begin{cases} 2x + 3y = 7 \\ 3x - y = 5 \end{cases}$$

- A -2  
B -1  
C 1  
D 2

M23086

209. Simplify.

$$(x^2 - 3x + 1) - (x^2 + 2x + 7)$$

- A  $x - 6$   
B  $-x + 8$   
C  $-5x - 6$   
D  $2x^2 - x + 8$

M03355

211. Simplify.

$$\frac{4x^3 + 2x^2 - 8x}{2x}$$

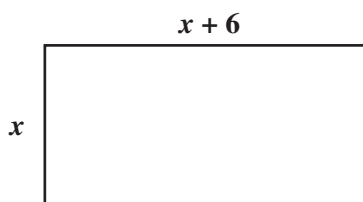
- A  $2x^2 + x - 4$   
B  $4x^2 + 2x - 8$   
C  $2x^2 + 2x^2 - 8x$   
D  $8x^4 + 4x^3 - 16x^2$

M03354

212. Mr. Jacobs can correct 150 quizzes in 50 minutes. His student aide can correct 150 quizzes in 75 minutes. Working together, how many minutes will it take them to correct 150 quizzes?

- A 30  
B 60  
C 63  
D 125

M03000



210. The length of the rectangle above is 6 units longer than the width. Which expression could be used to represent the area of the rectangle?

- A  $x^2 + 6x$   
B  $x^2 - 36$   
C  $x^2 + 6x + 6$   
D  $x^2 + 12x + 36$

M00402

213. Ricardo runs 10 miles each Saturday. If he doubles his usual speed, he can run the 10 miles in one hour less than his usual time. What is his usual speed?

- A 2 miles per hour  
B 3 miles per hour  
C 4 miles per hour  
D 5 miles per hour

M02561

**Algebra I**

**214. Yoshi has exactly one dollar in dimes (10 cents) and nickels (5 cents). If Yoshi has twice as many dimes as nickels, how many nickels does she have?**

- A 4
- B 8
- C 12
- D 15

M02410

**215. Diane delivers newspapers for \$5 a day plus \$0.04 per newspaper delivered. Jeremy delivers newspapers for \$2 a day plus \$0.10 per newspaper delivered. How many newspapers would Diane and Jeremy each need to deliver in order to earn the same amount?**

- A 30
- B 50
- C 75
- D 83

M02614

**216. A student store sold a total of 55 shirts for \$620. The shirts sold were either red or white. If the red shirts sold for \$12 each and the white sold for \$10 each, how many of each color of shirt were sold?**

- A 20 red  
35 white
- B 27 red  
28 white
- C 28 red  
27 white
- D 35 red  
20 white

M32234

California High School Exit Examination

*Algebra I*

| Question Number | Correct Answer | Standard | School Year of Exam |
|-----------------|----------------|----------|---------------------|
| 178             | D              | 1A2.0    | 2001–2002           |
| 179             | C              | 1A2.0    | 2001–2002           |
| 180             | D              | 1A2.0    | 2004–2005           |
| 181             | C              | 1A3.0    | 2001–2002           |
| 182             | B              | 1A3.0    | 2000–2001           |
| 183             | A              | 1A3.0    | 2006–2007           |
| 184             | A              | 1A4.0    | 2001–2002           |
| 185             | B              | 1A4.0    | 2001–2002           |
| 186             | B              | 1A4.0    | 2000–2001           |
| 187             | C              | 1A4.0    | 2000–2001           |
| 188             | B              | 1A4.0    | 2006–2007           |
| 189             | A              | 1A4.0    | 2007–2008           |
| 190             | A              | 1A5.0    | 2002–2003           |
| 191             | D              | 1A5.0    | 2001–2002           |
| 192             | A              | 1A5.0    | 2005–2006           |
| 193             | A              | 1A6.0    | 2000–2001           |
| 194             | D              | 1A6.0    | 2000–2001           |
| 195             | D              | 1A6.0    | 2001–2002           |
| 196             | A              | 1A6.0    | 2005–2006           |
| 197             | A              | 1A6.0    | 2007–2008           |
| 198             | A              | 1A7.0    | 2002–2003           |
| 199             | A              | 1A7.0    | 2001–2002           |
| 200             | A              | 1A7.0    | 2006–2007           |
| 201             | C              | 1A8.0    | 2001–2002           |
| 202             | B              | 1A8.0    | 2000–2001           |
| 203             | B              | 1A8.0    | 2000–2001           |
| 204             | A              | 1A8.0    | 2004–2005           |
| 205             | B              | 1A9.0    | 2001–2002           |
| 206             | C              | 1A9.0    | 2000–2001           |
| 207             | B              | 1A9.0    | 2003–2004           |
| 208             | D              | 1A9.0    | 2007–2008           |
| 209             | C              | 1A10.0   | 2002–2003           |
| 210             | A              | 1A10.0   | 2000–2001           |
| 211             | A              | 1A10.0   | 2003–2004           |
| 212             | A              | 1A15.0   | 2001–2002           |
| 213             | D              | 1A15.0   | 2004–2005           |
| 214             | A              | 1A15.0   | 2005–2006           |
| 215             | B              | 1A15.0   | 2006–2007           |
| 216             | D              | 1A15.0   | 2007–2008           |