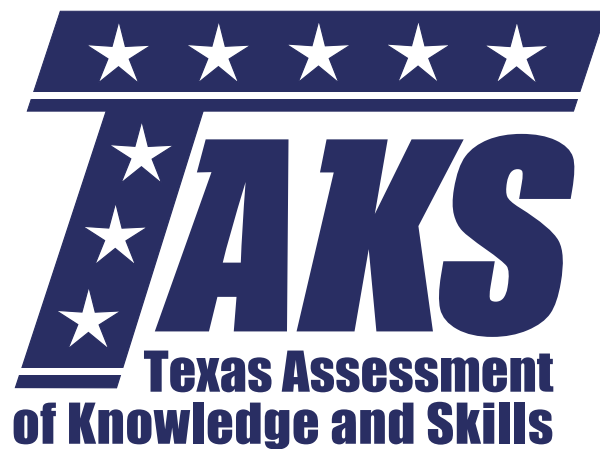


STUDENT NAME \_\_\_\_\_



**GRADE 9  
READING  
MATHEMATICS**

**Administered Spring 2003**



# READING

## DIRECTIONS

Read the two selections and the viewing and representing piece. Then answer the questions that follow.

# A Brother in Need

*a Vietnamese folktale*

- 1 There were once two brothers, Gan and Duc, whose father died suddenly, without leaving a will. Gan, the older brother, took all the land and property for himself except for one small shack and one miserable patch of acreage, which he allowed Duc to have. Duc's field was so tiny it could produce barely enough for him to eat, and year after year he grew poorer and thinner despite his hard work. Gan's green fields, meanwhile, flourished every year until he was the wealthiest man in the province.
- 2 The richer Gan grew, the more friends he discovered. They came to see him night and day, and he never hesitated to serve lavish meals, pour his best wines, and give away expensive tokens of affection. "I'll do anything for a friend in need," Gan was fond of saying.
- 3 Now, Gan had a kind-hearted wife named Hanh who could not understand why her husband treated his own brother so cruelly.
- 4 "You say there's nothing you wouldn't do for your friends," she pointed out, "and yet look at the way you let your brother live."
- 5 "I have nothing to do with the way he lives," Gan snapped. "He can fend for himself, just as I have. Besides, my friends rank among the finest people in the province. It's only fitting that I treat them according to what they deserved."
- 6 "Nevertheless, he is your brother. And I'm sure if you treated him as your friend, you'd find more devotion in him than in these friends you treat as brothers."
- 7 But this conversation took place many times, and Gan never listened.
- 8 One evening Gan came home to find his wife in tears.
- 9 "What's happened?" he asked.
- 10 "Something horrible," she sobbed. "This afternoon a beggar came to the door and asked for something to eat. He looked so weak and pale, I couldn't say no. So I told him to step inside while I got something from the kitchen. But no sooner did the poor man cross our threshold than he fainted from hunger. He struck his head on the table and fell dead on the floor. I was so frightened, I wrapped his body in a blanket and dragged it into the garden."

My notes about what I am reading

- 11 “But there’s nothing to worry about,” Gan assured her. “You did nothing wrong. We’ll explain the situation to the mandarin.<sup>1</sup> You were just trying to help.”
- 12 “You’re wrong,” Hanh cried. “The mandarin has never liked you. He’s jealous of your riches and popularity. He’ll use this chance to ruin us, if he can.”
- 13 At this Gan turned pale himself. He remembered how stern and cold the mandarin had always been, and how he never accepted Gan’s invitations to come dine.
- 14 “What will we do then?” he asked, wringing his hands.
- 15 “I’ve thought of a plan,” Hanh whispered. “Tonight you must bury the beggar deep in the forest, where no one will find him. Choose your most devoted friend to help you and swear him to secrecy.”
- 16 So Gan hurried to the home of the man who had dined most at his table. His friend greeted him with a warm embrace and an eager smile. But when Gan explained in low tones how he needed help, his friend shook his head and backed away. He was sorry, he’d love more than anything to help, but his back was giving him problems, and he couldn’t possibly carry the load of a dead man through the forest.
- 17 Gan hurried to another friend’s house, where once again he was warmly received.
- 18 “It’s been too long!” the friend gushed. “Tell me now, how can I help you?”
- 19 “I knew I could count on you,” Gan sighed. “You were always the best of friends. Something horrible has happened.” But as he told his story, his friend’s expression changed.
- 20 “I wish I could help, Gan, you know I do,” he lamented. “But the fact is, my poor old grandmother is ill tonight and may even be on her deathbed. I can’t possibly leave her. I knew you’d understand.”
- 21 And so it went, from door to door, from friend to friend. Some had sick relatives, some were ill themselves, others had pressing engagements. None were able to help, and Gan trudged home alone, trembling with fear and disappointment.
- 22 His wife listened to what happened and said:
- 23 “There’s no time to lose. You don’t have a choice. You must go ask your brother for help.”
- 24 Gan knew she was right—there was no one else now. He hurried into the night again and found his brother’s humble house.

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<sup>1</sup> a local official

- 25 Duc could not conceal his surprise when he opened his door. Then he saw the anguish on his brother's face.
- 26 "What's wrong?" he asked at once. "You look half-dead. Are you sick? Is Hanh all right?"
- 27 In faltering words, Gan told why he had come. Before he had finished, Duc was putting on his jacket. The two brothers rushed back to Gan's house, found the shrouded body in the garden, and hauled it into the woods. The sun was rising by the time they'd buried the secret burden and staggered home again.
- 28 They were stunned to find one of the mandarin's men waiting for them.
- 29 "You are to come with me," he ordered Gan, "along with your wife and brother."
- 30 They were taken to the mandarin's house, and there they found gathered all the friends whose help Gan had begged. One by one the informers stepped forward and told how they had refused to take part in the brothers' foul crime.
- 31 "Not only are you murderers," the mandarin said, "you tried to talk your friends into concealing your misdeed. Thankfully, your friends are better men than you. They are honest, and they are loyal to me. They followed you into the forest and then came to report your crime. So there's no use in denying it. We'll go retrieve the body, and then you'll get what is due."
- 32 The entire crowd trooped into the forest, and the hastily dug grave was uncovered. There was a gasp when the blanket was unwrapped and the corpse of an old man, not a beggar, fell out.
- 33 "What is the meaning of this?" the mandarin demanded.
- 34 Gan and Duc stood as confused as the rest. Their accusers glanced at each other nervously.
- 35 Then Hanh stepped forward.
- 36 "This is my doing," she confessed. "For a long time I've watched my husband treat his brother like a stranger while he spared nothing on his friends. I could see how those friends hung on to him only because of the food and wine they could have at his expense. I wanted to prove to him that there can be no loyalty greater than a brother's. So yesterday, when this old man of ours died, I invented a plan to open my husband's eyes. And here we are."
- 37 Gan's accusers looked at their feet, while the mandarin stood silent for a moment.

38 “You are a wise woman,” he said at last. “This lesson is worth a night’s inconvenience.”

My notes about what I am reading

39 From then on, Gan and Duc lived as brothers should.

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Students read a selection titled “My Bold Brother Carmen” and then answered questions 15–30 that follow on pp. 15–17 of this document.

Due to copyright restrictions, this selection cannot be released to the public electronically. However, it is available via paper copy in the *Texas Assessment of Knowledge and Skills Grade 9 Reading Released Test, Spring 2003*. Please see your district for more information.

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# Kid Sister

Starring Carrie and Susan Barnes

**When a false rumor threatens to ruin Joni's reputation, only one person can help . . . her pesky**

**kid sister!**

**Opens Friday in theaters everywhere!**

“★★★ . . . A great summer movie for audiences of all ages!”

— Peter Tipton, Daily Sun

Photo courtesy of © Randy Faris/CORBIS.

Use “A Brother in Need” (pp. 4–7) to answer questions 1–14.

- 1 Whose plan is it to bury the body in the forest?
- A Gan’s
  - B Hanh’s
  - C Duc’s
  - D Gan’s friends’
- 2 Hanh says that the mandarin has never liked Gan because —
- F Gan is rich and popular
  - G the mandarin disliked Gan’s father
  - H Gan cheated Duc
  - J the mandarin wants Gan’s land
- 3 Paragraphs 16 through 21 are mostly about —
- A the many loyal friends Gan has made
  - B Gan’s attempts to further cheat his brother
  - C Gan’s rise to popularity and riches
  - D the unwillingness of Gan’s friends to help him
- 4 After learning that Gan did not murder anyone, the mandarin is not upset about the night’s activities because —
- F Hanh has taught them all a valuable lesson
  - G he has always thought that Gan was innocent
  - H Hanh has always been a good wife
  - J he respects Gan’s friends for coming forward
- 5 Gan’s problem in the story begins when —
- A Hanh tells him about the death of the beggar
  - B his friends follow Gan and Duc into the forest
  - C Duc begins to grow poorer and thinner
  - D the mandarin discovers what Gan has done
- 6 The reason Hanh is unhappy with Gan is that —
- F she wants him to claim all his father’s land
  - G he is spending too much time with his friends
  - H the mandarin may take away Gan’s land
  - J she wants him to treat Duc with respect
- 7 Which sentence from the story best conveys Gan’s stubbornness?
- A *But this conversation took place many times, and Gan never listened.*
  - B *One evening Gan came home to find his wife in tears.*
  - C *In faltering words, Gan told why he had come.*
  - D *So Gan hurried to the home of the man who had dined most at his table.*

8 In paragraph 14, the author describes Gan as “wringing his hands” to show that Gan is —

- F nervous about the mandarin’s attitude
- G disgusted with his poor brother
- H concerned about his friend’s response
- J irritated with his wife

9 The author builds suspense by —

- A using a flashback to explain why the mandarin dislikes Gan
- B emphasizing the differences between Gan and Duc
- C highlighting the refusal of Gan’s friends to help bury the body
- D describing Gan as a greedy and ambitious man

10 Gan believes that Hanh’s story about the beggar is true because —

- F Gan has consistently told her to beware of beggars
- G she has often shown her compassion toward others
- H Gan expects something bad to happen
- J she often makes hasty decisions

11 One way this story resembles a fable is that —

- A the story is set in a foreign country
- B the story conveys a clear lesson
- C the events could never have happened
- D an animal plays an important role in the story

12 In paragraph 1, the author uses the word *allowed* to emphasize —

- F Duc’s lack of knowledge about farming
- G the abundance of Gan’s wealth
- H Hanh’s insistence that Duc receive something
- J the stinginess of Gan’s gift to his brother

13 In paragraph 19, the friend’s expression changes because he —

- A knows that he will not help Gan as he had offered
- B is pleased by Gan’s visit
- C hopes that Gan will be caught by the mandarin
- D is concerned about his sick grandmother

14 In paragraph 37, the author writes that “Gan’s accusers looked at their feet” to show that the accusers are —

- F ashamed of Gan’s behavior
- G disappointed in the mandarin’s decision
- H embarrassed about their own actions
- J relieved that Gan will avoid jail

Use “My Bold Brother Carmen” (pp. 8–11) to answer questions 15–28.

- 15 Which of the following words is a synonym for the word *mustering* in paragraph 45?
- A Moving
  - B Gathering
  - C Placing
  - D Separating
- 16 In New York City Carmen worked as a —
- F librarian
  - G college professor
  - H graphic designer
  - J woodworker
- 17 Paragraph 46 is mainly about —
- A Carmen’s sense of loss as his marriage unraveled
  - B the author’s feelings of envy and cowardice
  - C Carmen’s eventual success in his career
  - D the author’s change in attitude toward his brother
- 18 Which words from paragraphs 31 and 32 help the reader understand the meaning of the word *regaled*?
- F *farthest, unsophisticated, foreign*
  - G *felt, compared, visited*
  - H *significant, achievements, failure*
  - J *tell, relate, share*
- 19 After Carmen’s first marriage failed, the author noticed that his brother seemed —
- A angry
  - B tired
  - C relieved
  - D embarrassed
- 20 The source of the author’s conflict with his brother was —
- F the rude and inconsiderate way in which Carmen treated the author
  - G the author’s envy of Carmen’s talents and lifestyle
  - H Carmen’s unwillingness to share his life with the author
  - J the author’s belief that being a professional artist was a foolish career choice
- 21 Carmen’s telephone call to his brother after the failure of Carmen’s second marriage indicates —
- A the author’s foolish jealousy
  - B Carmen’s need for a family connection
  - C Carmen’s faults as a husband
  - D the author’s disappointment in Carmen
- 22 Because this article is written about past events, the author —
- F is still confused about why he once envied his brother
  - G mixes some of the factual events with fictional events
  - H expresses a clearer understanding of his brother and himself
  - J still has dreams of becoming a professional writer

23 In paragraph 41, the author uses figurative language to describe Carmen's —

- A difficulty expressing his feelings
- B apology for calling so late
- C confusion about his divorce
- D refusal to accept responsibility

24 What is an overall theme expressed in the article?

- F The relationships between brothers are usually stronger than those between sisters.
- G Focusing on professional goals rather than family leads to disappointment.
- H In order to succeed, a marriage must be based on honesty.
- J Happiness is found in being satisfied with personal achievements.

25 Because the author describes the events of his life in the order in which they occurred, it is easier for the reader to —

- A understand why Carmen's marriages failed
- B see how his relationship with Carmen changed
- C appreciate what the brothers achieved in life
- D understand the effects of attending boarding school

26 Which of the following sentences from the article explains the author's primary conflict?

- F *The farthest I'd been from home, by contrast, was Rhode Island.*
- G *Almost in desperation, I turned back to simple things.*
- H *An internal voice said I lacked guts.*
- J *"But the sign says to keep out," I warned.*

27 The audience that would probably relate most to the article's central message would be —

- A siblings
- B artists
- C teachers
- D parents

28 By the end of the article, the author and his brother became stronger people because of their —

- F competition with each other
- G individual career choices
- H compassion and support for each other
- J international traveling experiences



**Use “A Brother in Need” and “My Bold Brother Carmen” (pp. 4–11)  
to answer questions 29 and 30.**

- 29** Both Gan and the author of “My Bold Brother Carmen” mature because —
- A** they overcome the loss of a parent
  - B** they are able to influence those around them
  - C** they eventually attain financial success
  - D** they develop a greater appreciation for family
- 30** What is one idea addressed in both “A Brother in Need” and “My Bold Brother Carmen”?
- F** The importance of growth in relationships
  - G** The power of money to change a person
  - H** The consequences of marrying early in life
  - J** The value of manual labor

**Use the visual representation (p. 12) to answer questions 31–33.**

- 31** The reader can tell that the movie’s primary purpose is to —
- A** attract the viewer with adventure, action, mystery, and suspense
  - B** make the viewer understand the value of movies for the whole family
  - C** convince the viewer that high school can be difficult
  - D** entertain the viewer with an amusing story about a helpful kid sister
- 32** The movie’s producers chose this photograph because it shows that —
- F** the sisters are close despite their differences
  - G** the rumor has had a devastating effect on the older sister
  - H** the sisters have unique personalities
  - J** the kid sister is irritating to the older sister
- 33** The reader can conclude that the movie is primarily intended for an audience of —
- A** movie critics
  - B** adults
  - C** families
  - D** young children

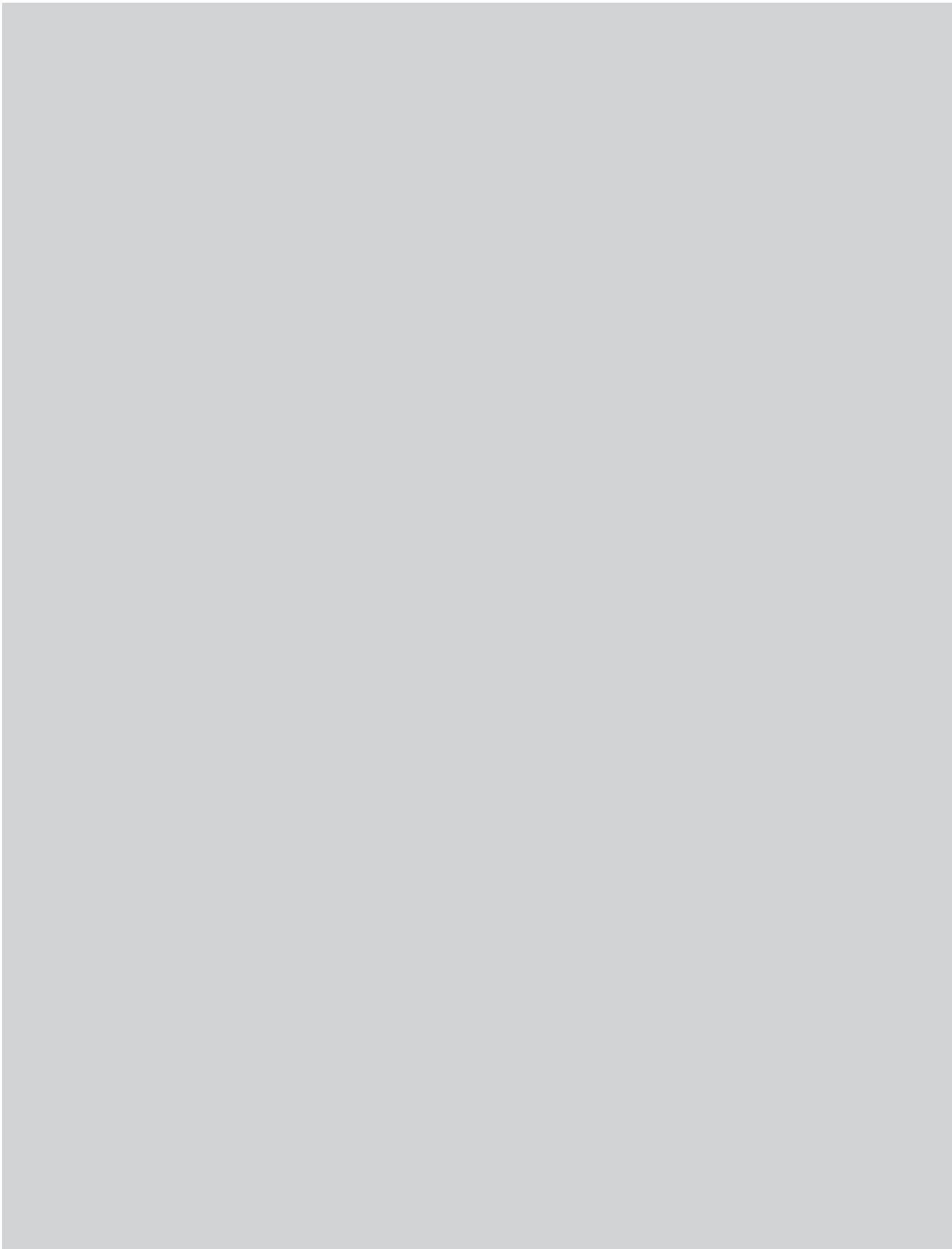
## DIRECTIONS

Answer the following questions in the space provided on the answer document.

- 34 How does Gan change from the beginning to the end of “A Brother in Need”? Support your answer with evidence from the selection.
- 35 In “My Bold Brother Carmen,” who do you think is more successful, the author or his brother Carmen? Explain your answer and support it with evidence from the selection.
- 36 Which of the siblings from “A Brother in Need” and “My Bold Brother Carmen” would you like to have as a brother? Explain your answer and support it with evidence from **both** selections.

BE SURE YOU HAVE WRITTEN YOUR ANSWERS  
ON THE ANSWER DOCUMENT.





# MATHEMATICS



# Mathematics Chart

## LENGTH

Metric	Customary
1 kilometer = 1000 meters	1 mile = 1760 yards
1 meter = 100 centimeters	1 mile = 5280 feet
1 centimeter = 10 millimeters	1 yard = 3 feet
	1 foot = 12 inches

## CAPACITY AND VOLUME

Metric	Customary
1 liter = 1000 milliliters	1 gallon = 4 quarts
	1 gallon = 128 ounces
	1 quart = 2 pints
	1 pint = 2 cups
	1 cup = 8 ounces

## MASS AND WEIGHT

Metric	Customary
1 kilogram = 1000 grams	1 ton = 2000 pounds
1 gram = 1000 milligrams	1 pound = 16 ounces

## TIME

1 year = 365 days
1 year = 12 months
1 year = 52 weeks
1 week = 7 days
1 day = 24 hours
1 hour = 60 minutes
1 minute = 60 seconds

Metric and customary rulers can be found on the separate Mathematics Chart.

# Mathematics Chart

<b>Perimeter</b>	rectangle	$P = 2l + 2w$ or $P = 2(l + w)$
<b>Circumference</b>	circle	$C = 2\pi r$ or $C = \pi d$
<b>Area</b>	rectangle	$A = lw$ or $A = bh$
	triangle	$A = \frac{1}{2}bh$ or $A = \frac{bh}{2}$
	trapezoid	$A = \frac{1}{2}(b_1 + b_2)h$ or $A = \frac{(b_1 + b_2)h}{2}$
	circle	$A = \pi r^2$
<b>Surface Area</b>	cube	$S = 6s^2$
	cylinder (lateral)	$S = 2\pi rh$
	cylinder (total)	$S = 2\pi rh + 2\pi r^2$ or $S = 2\pi r(h + r)$
	cone (lateral)	$S = \pi rl$
	cone (total)	$S = \pi rl + \pi r^2$ or $S = \pi r(l + r)$
	sphere	$S = 4\pi r^2$
<b>Volume</b>	prism or cylinder	$V = Bh^*$
	pyramid or cone	$V = \frac{1}{3}Bh^*$
	sphere	$V = \frac{4}{3}\pi r^3$
<i>*B represents the area of the Base of a solid figure.</i>		
<b>Pi</b>	$\pi$	$\pi \approx 3.14$ or $\pi \approx \frac{22}{7}$
<b>Pythagorean Theorem</b>		$a^2 + b^2 = c^2$
<b>Distance Formula</b>		$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
<b>Slope of a Line</b>		$m = \frac{y_2 - y_1}{x_2 - x_1}$
<b>Midpoint Formula</b>		$M = \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$
<b>Quadratic Formula</b>		$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
<b>Slope-Intercept Form of an Equation</b>		$y = mx + b$
<b>Point-Slope Form of an Equation</b>		$y - y_1 = m(x - x_1)$
<b>Standard Form of an Equation</b>		$Ax + By = C$
<b>Simple Interest Formula</b>		$I = prt$



## DIRECTIONS

Read each question. Then fill in the correct answer on your answer document. If a correct answer is not here, mark the letter for “Not Here.”

### SAMPLE A

Find the slope of the line  $2y = 8x - 3$ .

- A  $-\frac{3}{2}$
- B 4
- C 8
- D Not Here

### SAMPLE B

Janice uses a rectangular box to store her art supplies. The dimensions of the rectangular box are 22.5 inches by 14 inches by 11.5 inches. What is the volume of this box in cubic inches?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.



- 1 Which of the equations below represents the second step of the solution process?

Step 1.  $5(6x + 4) + 1 = -39$

Step 2.

Step 3.  $30x + 21 = -39$

Step 4.  $30x = -60$

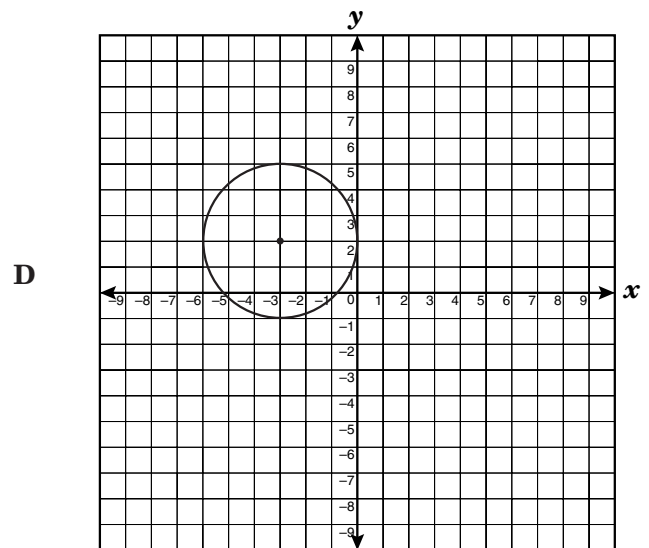
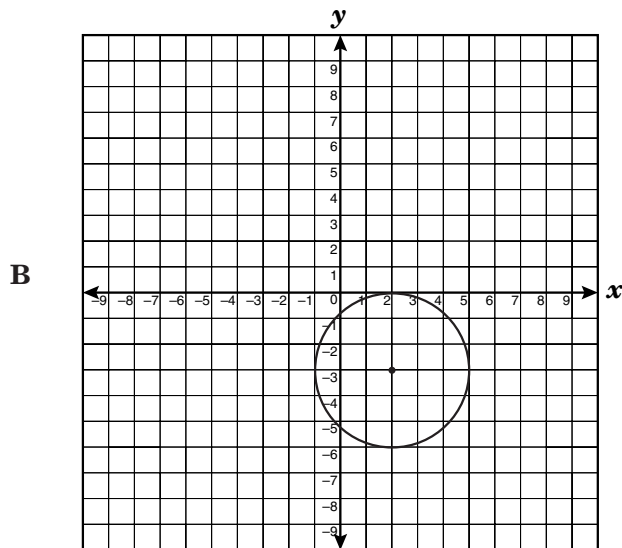
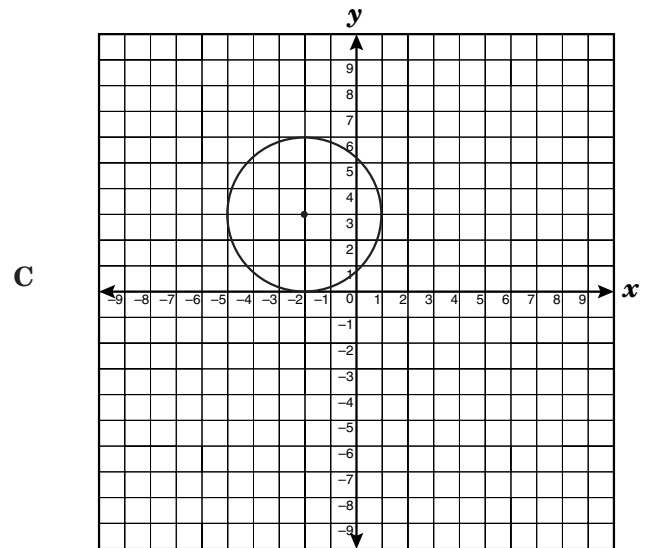
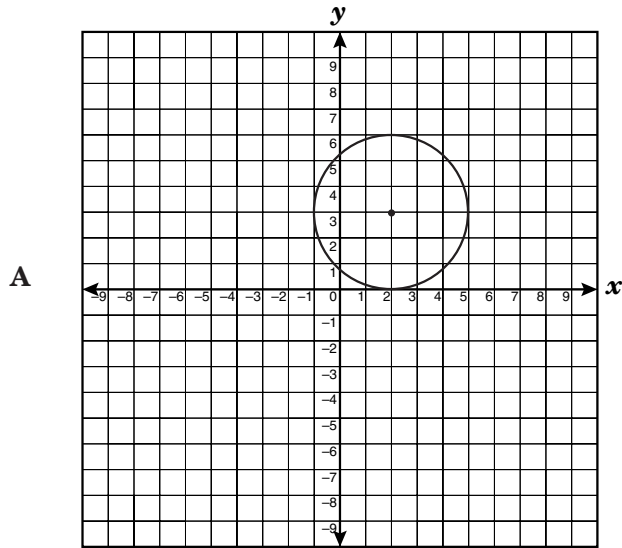
Step 5.  $x = -2$

- A  $5(6x + 1) + 4 = -39$   
B  $5(6x + 5) = -39$   
C  $30x + 4 + 1 = -39$   
D  $30x + 20 + 1 = -39$

- 2 On a certain day the exchange rate of Mexican pesos for U.S. dollars was approximately 10 pesos for 1 dollar. If an exchange of 4,000 pesos was made that day, what was the approximate value of the exchange in dollars?

- F \$40  
G \$400  
H \$4,000  
J \$40,000

3 Which circle has a center located at coordinates  $(-3, 2)$ ?



4 Last basketball season Ricky made 58% of the free throws he attempted. In the first game this season, Ricky went to the free-throw line 10 times. About how many free throws did Ricky make if his success rate from last season continued?

F 58

G 10

H 6

J 4

5 Alonso's family rented a car when they flew to Orlando for a 4-day vacation. They paid \$39 per day and \$0.09 for each mile driven. How much did it cost to rent the car for 4 days and drive 350 miles, not including tax?

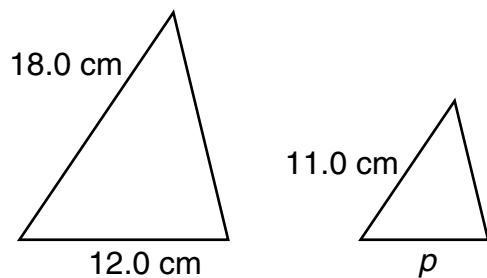
A \$70.50

B \$124.50

C \$156.00

D \$187.50

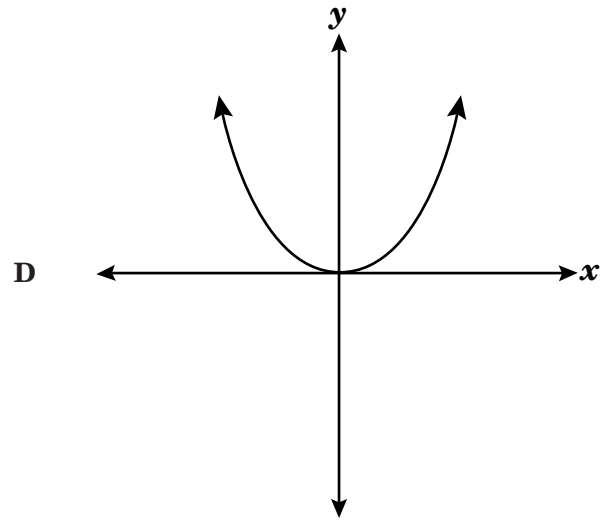
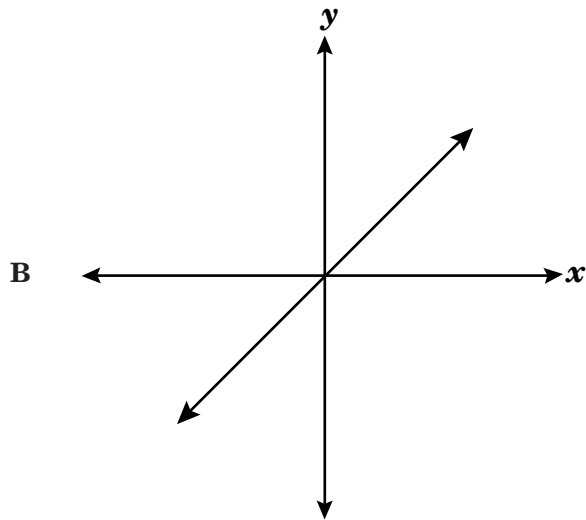
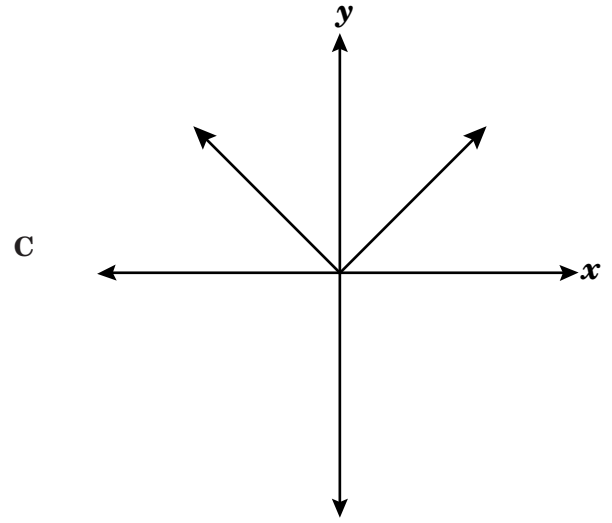
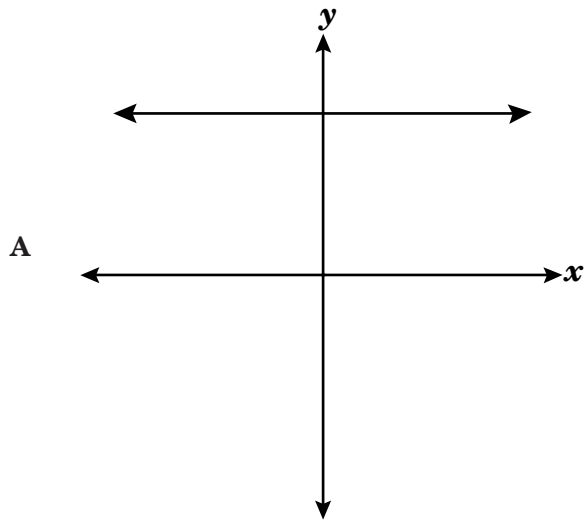
- 6 Kate has 2 similar triangular pieces of paper, as shown below.



Using the dimensions given, find the approximate length of the side labeled  $p$ .

- F 2.4 centimeters
- G 7.3 centimeters
- H 16.5 centimeters
- J 19.6 centimeters

7 Which is the best representation of the function  $y = x$ ?



8 Auto-Check Motors charged Mr. Jones \$84.00 for an automotive part plus \$68.00 per hour that a mechanic worked to install the part. The total charge was \$353.00. For about how long did the mechanic work to install the part on Mr. Jones's car?

F 6 h

G 5 h

H 4 h

J 3 h

9 In the graph of the function  $y = x^2 + 5$ , which describes the shift in the vertex of the parabola if, in the function, 5 is changed to  $-2$ ?

A 3 units up

B 7 units up

C 3 units down

D 7 units down

10 Which expression describes the area in square units of a rectangle that has a width of  $4x^3y^2$  and a length of  $3x^2y^3$ ?

F  $12x^6y^6$

G  $12x^5y^5$

H  $7x^6y^6$

J  $7x^5y^5$

11 Monica collected data on the ages and heights of a random sample of sixth-, seventh-, and eighth-grade students at her school. If she plots the data on a scatterplot, what relationship will she most likely see between age and height?

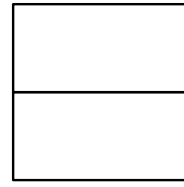
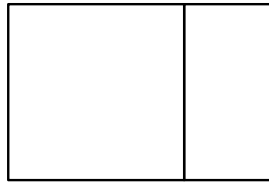
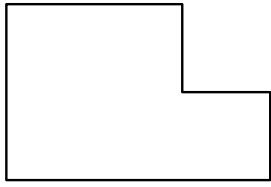
A A negative correlation

B No correlation

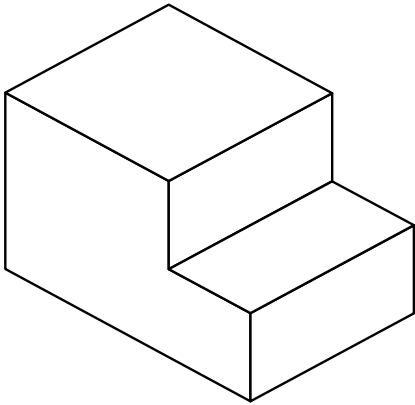
C A positive correlation

D A constant correlation

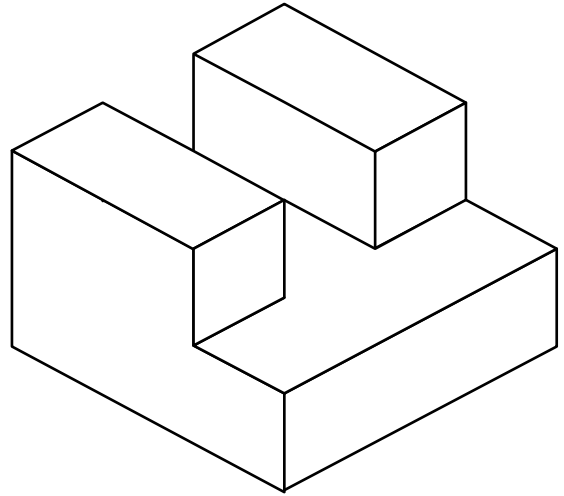
12 Match the three views of this solid to its 3-dimensional sketch.



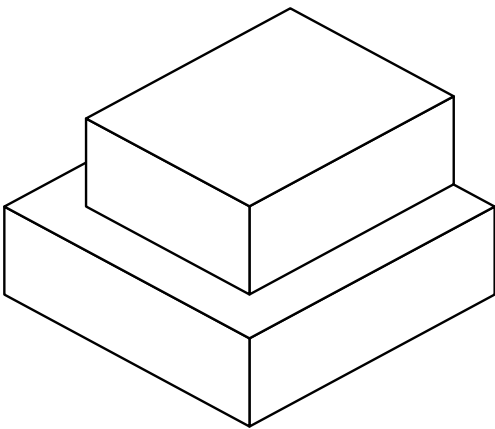
F



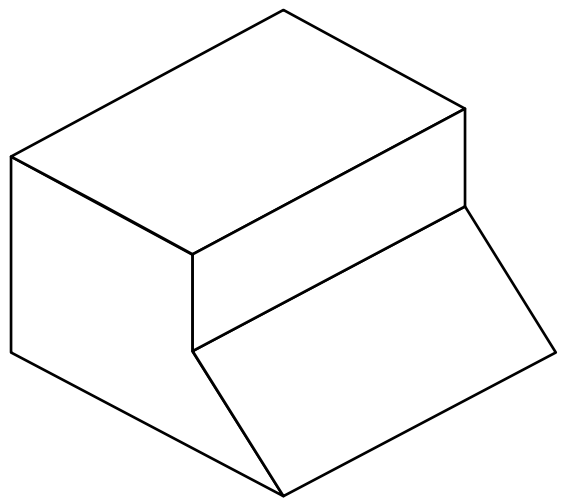
H



G



J





- 13 Ms. Kitts works at a music store. Last week she sold 6 more than 3 times the number of CDs that she sold this week. Ms. Kitts sold a total of 108 CDs over the 2 weeks. Which system of equations can be used to find  $l$ , the number of CDs she sold last week, and  $t$ , the number of CDs she sold this week?

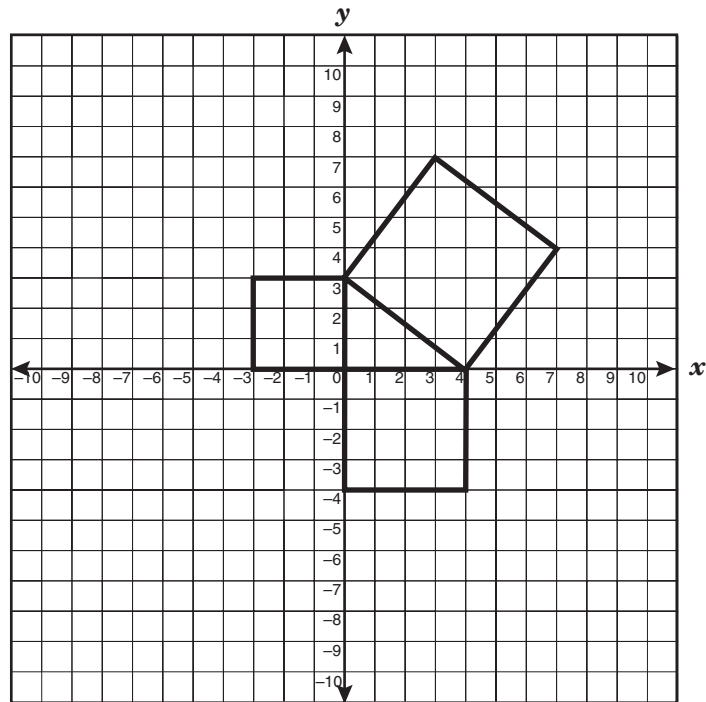
A  $l + t = 108$   
 $t = 3l + 6$

B  $l + t = 108$   
 $t = 3l - 6$

C  $l + t = 108$   
 $l = 3t - 6$

D  $l + t = 108$   
 $l = 3t + 6$

14 What is the area of the largest square in the diagram?



- F 5 units<sup>2</sup>
- G 9 units<sup>2</sup>
- H 16 units<sup>2</sup>
- J 25 units<sup>2</sup>

**15** The function  $g(x) = 1.25 + 0.70(x - 1)$  represents the charge for parking in the mall garage for  $x$  number of hours. Which statement best represents the formula for this charge?

- A** The charge consists of a set fee of \$1.25 plus \$0.70 for every hour parked.
- B** The charge consists of a flat rate of \$0.70 for every hour parked.
- C** The charge consists of \$1.25 for the first hour parked and \$0.70 for each additional hour.
- D** The charge consists of \$1.25 for every hour parked plus a set fee of \$0.70.

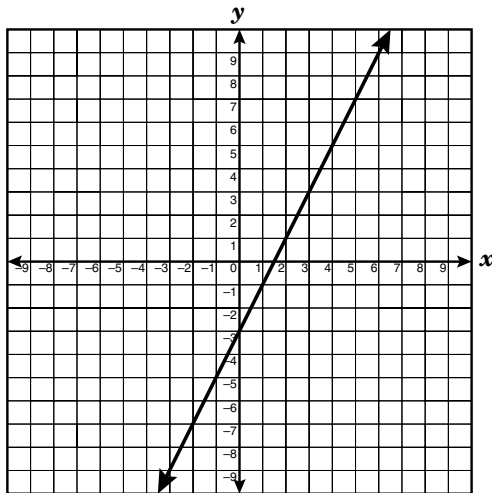
**16** Describe the effect on the area of a circle when the radius is doubled.

- F** The area is reduced by  $\frac{1}{2}$ .
- G** The area remains constant.
- H** The area is doubled.
- J** The area is increased four times.

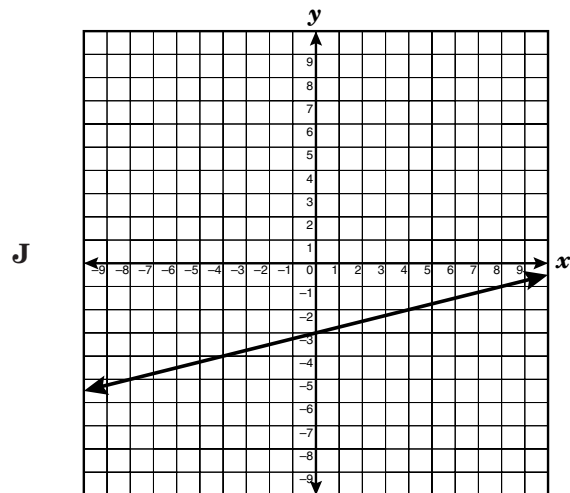
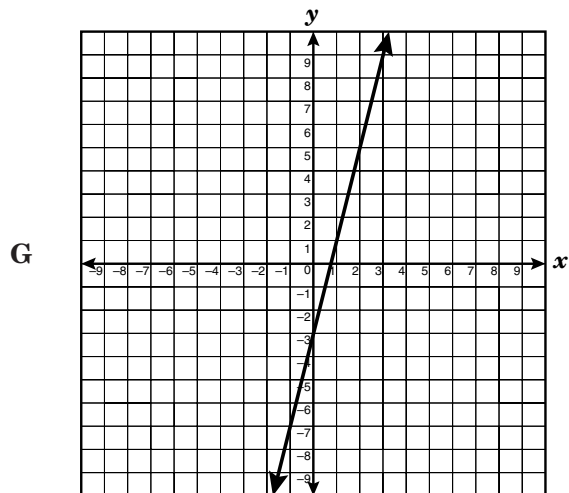
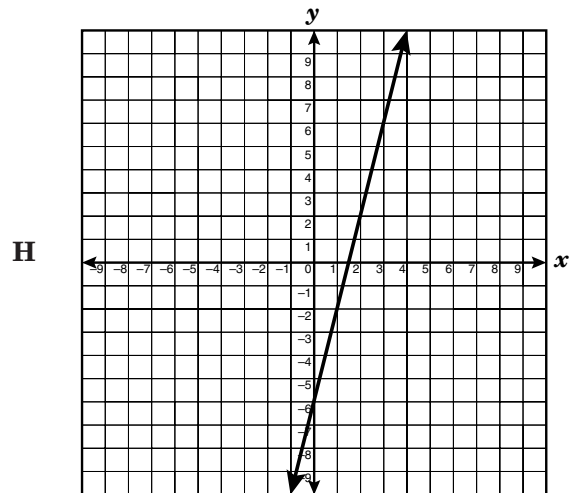
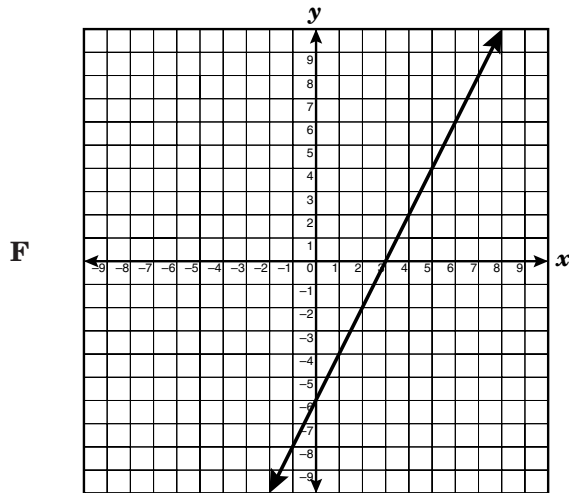
**17** A couple bought a house and calculated that they would pay 30% of their combined monthly income of \$5,569.75 toward the monthly mortgage payment on the house. Approximately how much will the couple pay for their monthly mortgage payment?

- A** \$186
- B** \$1,671
- C** \$3,899
- D** \$18,566

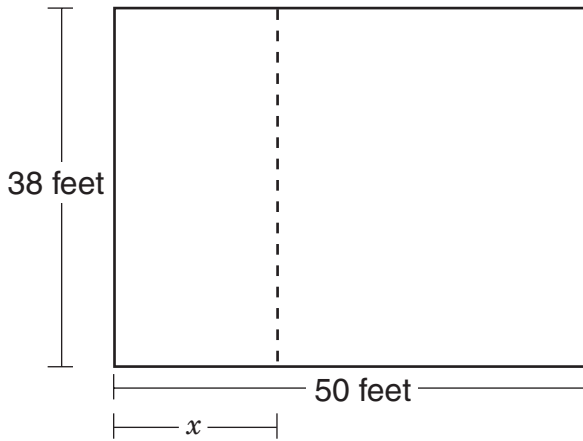
- 18 The graph of a line that contains the points  $(-1, -5)$  and  $(4, 5)$  is shown below.



Which best represents this line if the slope is doubled and the y-intercept remains constant?



- 19 A large room has the dimensions shown below. A partition is to be installed so that 2 classes can use it. The area of the smaller classroom is  $38x$ . How can the area of the larger classroom be expressed in terms of  $x$ ?



- A  $50 - 38x$
- B  $\frac{38(50)}{3x}$
- C  $\frac{(50 - x)}{38}$
- D  $38(50 - x)$

- 20 A newspaper reported that the mean height of waves in the Norwegian Sea increased by 4 inches per year from 1955 to 1994. What additional information is needed to calculate the mean wave height in 1994?

- F The mean height of waves in 1955
- G The range of wave heights from 1955 to 1994
- H The projection of the mean height of waves for the next year
- J The distance from land to where the wave measurements were taken

- 21 A lawn is shaped like a parallelogram with a base of 32 feet and a height of 15 feet. Covering the lawn with grass will cost \$2.60 per square foot. How much money will it cost to cover the lawn with grass?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

22 Which problem is best represented by the number sentence  $19 + 3(12 - x) = 40$ ?

**F** Ricardo spent \$19, and Lydia spent 3 times \$12 less than Ricardo. Together they spent \$40. How much did Lydia spend?

**H** Juan earned \$19 baby-sitting and sold 3 boxes of apples for \$12 each. Now he has \$40. How much did he earn?

**G** Gail earned \$19 baby-sitting and mowed 3 lawns in less than 12 hours. She earned a total of \$40. How much did she earn per lawn?

**J** Denise paid \$19 for 1 regularly priced item and bought 3 items on sale that were regularly priced at \$12. She spent \$40 in all. What was the price reduction on the 3 sale items?

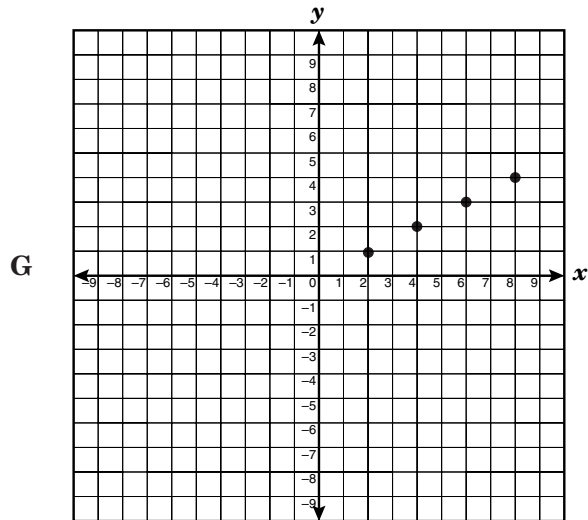
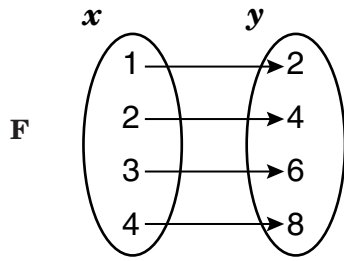
- 23** Trina was recording the calorie content of the food she ate. For lunch she had 3 ounces of chicken, 2 slices of cheese, 2 slices of wheat bread, one-half tablespoon of mayonnaise, a 16-ounce glass of lemonade, and an apple for dessert. According to the chart below, which equation best represents the total number of calories she consumed during lunch?

Calorie Content

Food	Calories
Apple (medium)	70
Wheat bread (1 slice)	55
Cheese (1 slice)	45
Chicken (3 oz)	115
Lemonade (8 oz)	110
Mayonnaise (1 tbsp)	100

- A**  $\text{Calories} = 3(115) + 2(45) + 2(55) + \frac{1}{2}(100) + 16(110) + 70$
- B**  $\text{Calories} = 115 + 45 + 55 + 100 + 110 + 70$
- C**  $\text{Calories} = 115 + 2(45) + 2(55) + \frac{1}{2}(100) + 2(110) + 70$
- D**  $\text{Calories} = 115 + \frac{45}{2} + \frac{55}{2} + 2(100) + \frac{110}{2} + 70$

- 24 The function  $f(x) = \{(1, 2), (2, 4), (3, 6), (4, 8)\}$  can be represented in several other ways. Which is NOT a correct representation of the function  $f(x)$ ?



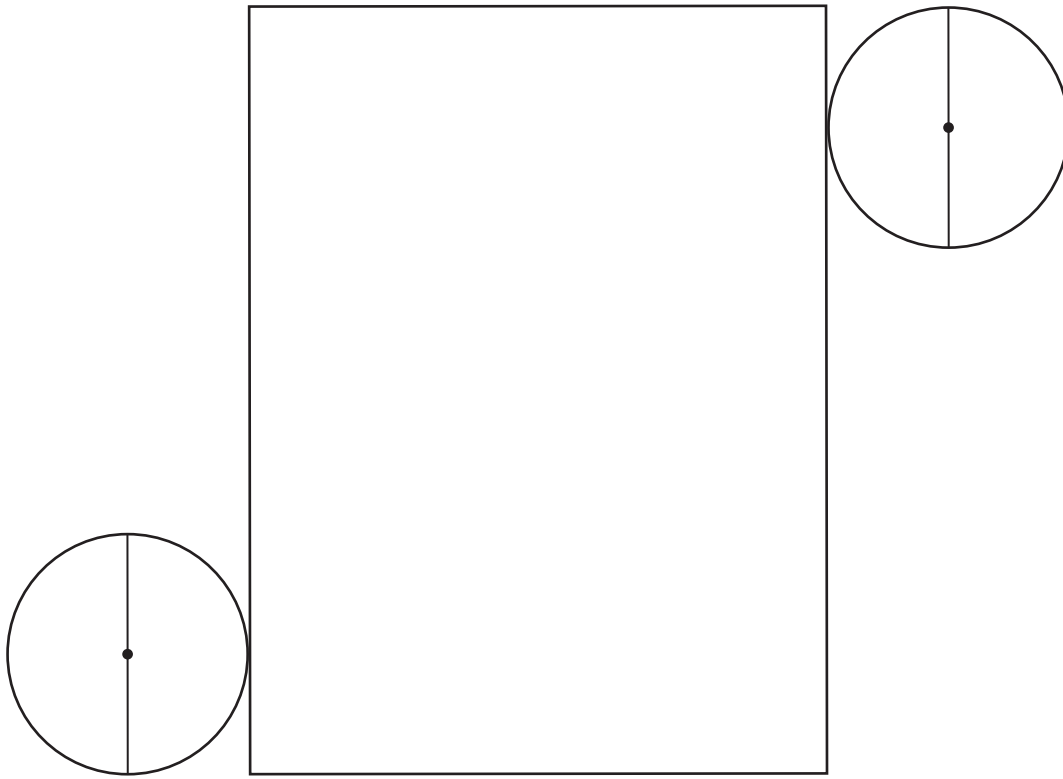
- H  $x$  is a natural number less than 5 and  $y$  is twice  $x$
- J  $y = 2x$  and the domain is  $\{1, 2, 3, 4\}$

- 25 Which is always a correct conclusion about the quantities in the function  $y = x + 4$ ?

- A The variable  $x$  is always 4 more than  $y$ .
- B When the value of  $x$  is negative, the value of  $y$  is also negative.
- C The variable  $y$  is always greater than  $x$ .
- D As the value of  $x$  increases, the value of  $y$  decreases.



- 26 The net of a cylinder is shown below. Use the ruler on the Mathematics Chart to measure the dimensions of the cylinder to the nearest  $\frac{1}{8}$  inch.



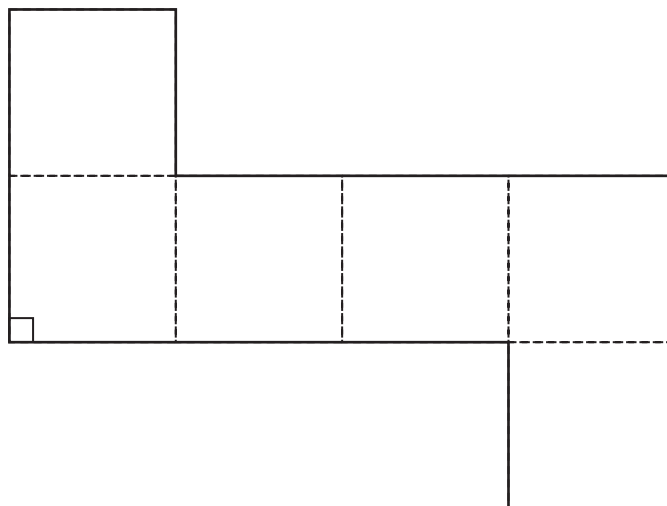
Which is closest to the total surface area of this cylinder?

- F 4 in.<sup>2</sup>
- G 11 in.<sup>2</sup>
- H 14 in.<sup>2</sup>
- J 25 in.<sup>2</sup>

- 27 The area of a rectangle is  $30m^{11}n^5$  square units. If the length of the rectangle is  $6m^4n^2$  units, how many units wide is the rectangle? ( $m \neq 0$  and  $n \neq 0$ )
- A  $5m^7n^3$  units
  - B  $24m^7n^3$  units
  - C  $36m^{15}n^7$  units
  - D  $180m^{15}n^7$  units

- 28 If the variables  $x$  and  $y$  are related so that  $x - y > x + y$ , which statement must be true?
- F The variable  $x$  is greater than the variable  $y$ .
  - G The variable  $x$  is a negative number.
  - H The variable  $y$  is a negative number.
  - J The variable  $y$  is a positive number.

29 The net of a cube is shown below.



Use the ruler on the Mathematics Chart to measure the dimensions of the cube to the nearest tenth of a centimeter. Which best represents the volume of this cube to the nearest cubic centimeter?

- A  $11 \text{ cm}^3$
- B  $13 \text{ cm}^3$
- C  $30 \text{ cm}^3$
- D  $42 \text{ cm}^3$

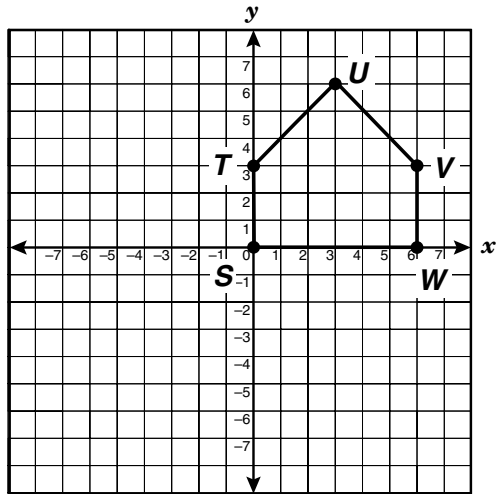
30 The number of hours Abe practices golf each week,  $g$ , is 2 more than the number of hours he runs,  $r$ . Which equation represents the number of hours he runs each week?

- F  $r = g - 2$
- G  $g = r - 2$
- H  $g = 2r$
- J  $r = g + 2$

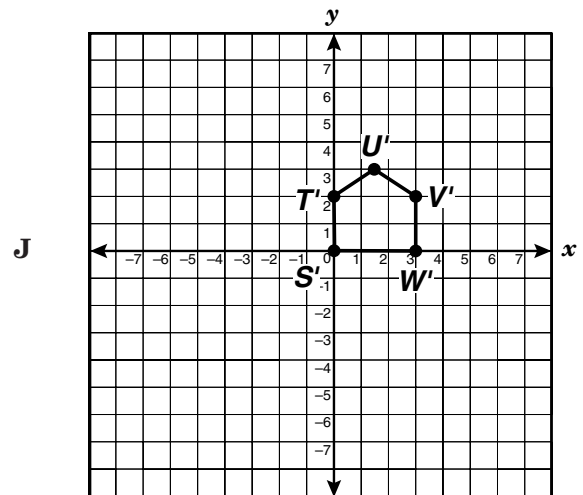
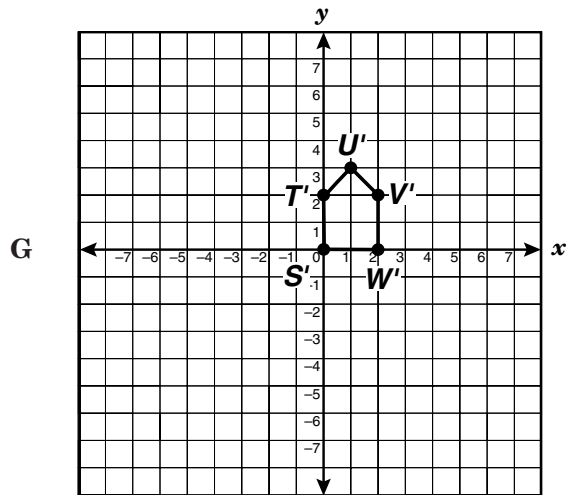
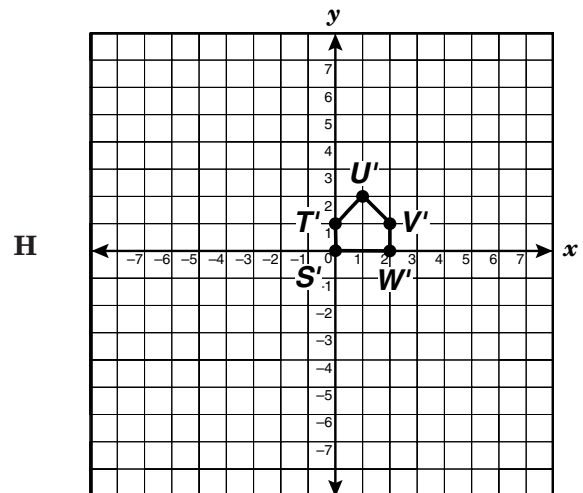
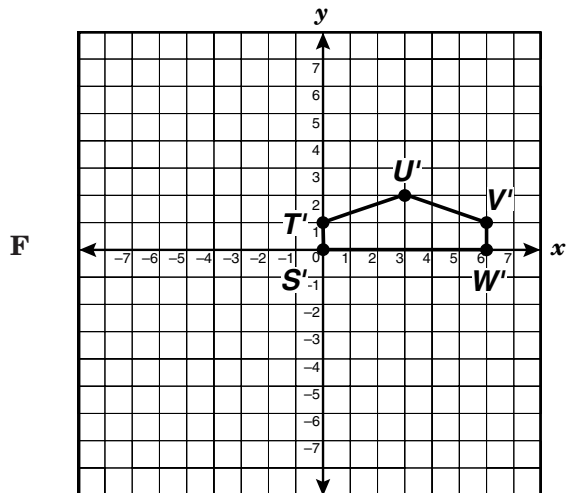
31 A 12- by 16-foot rectangular floor will be covered by square tiles that measure 2 feet on each side. If the tiles are not cut, how many of them will be needed to cover the floor?

- A 192
- B 96
- C 48
- D 14

32 The pentagon in the graph below is to be dilated by a scale factor of  $\frac{1}{3}$ .

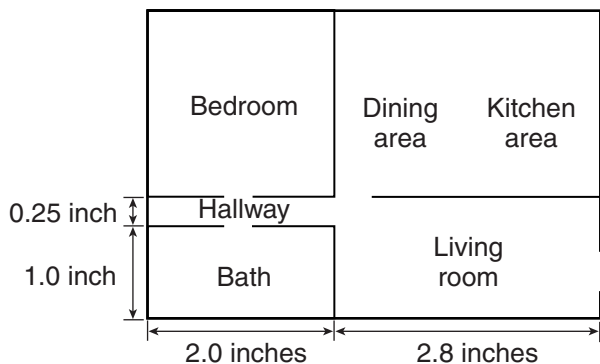


Which graph shows this transformation?



- 33** A store sells milk in two different containers. The first container is a rectangular prism that has a height of 8 inches and a square base with a side length of 2 inches. The other container is a cylinder with a radius of 1.75 inches and a height of 8 inches. Which best describes the relationship between the two containers?
- A** The prism has the greater volume.  
**B** The cylinder has the greater volume.  
**C** The volumes are equivalent.  
**D** The volumes cannot be determined.

- 34** Mr. McGregor wanted to cover the floor in his living room with carpet that cost \$12 per square yard. The blueprint below shows the area of the living room relative to the area of the house.



What information must be provided in order to find the total cost of the carpet?

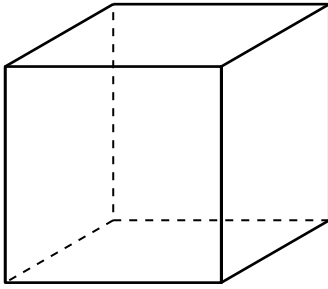
- F** The lengths and widths of the adjoining rooms in the blueprint  
**G** The scale of yards to inches in the blueprint  
**H** The total area of the house in the blueprint  
**J** The thickness of the carpeting in inches

- 35** A watch loses 3 minutes every 24 hours. How much time will it lose in 2 hours?
- A** 1.6 seconds  
**B** 5 seconds  
**C** 15 seconds  
**D** 22.5 seconds

- 36** At Reyna High School 50% of the students eat lunch in the school cafeteria. In the same school 10% of the students participate in sports. What is the probability that a student selected at random eats in the school cafeteria and participates in sports?

- F**  $\frac{1}{2}$   
**G**  $\frac{1}{10}$   
**H**  $\frac{1}{20}$   
**J**  $\frac{1}{60}$

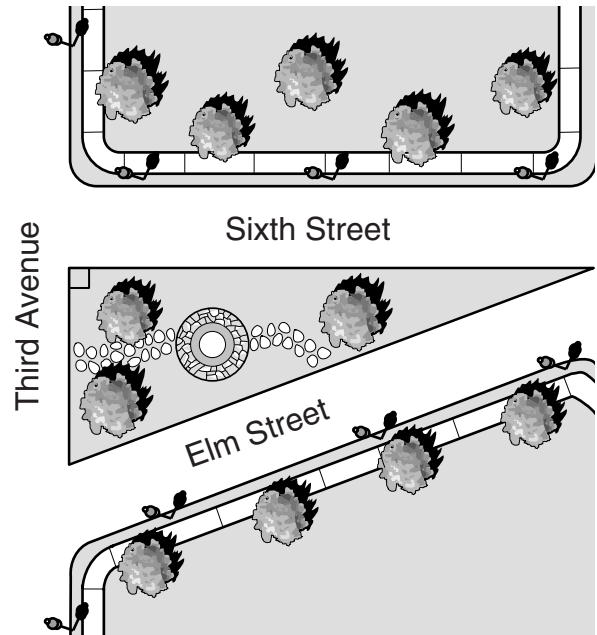
- 37 A 72-inch piece of wire was cut into equal segments, which were then soldered at the ends to form the edges of a cube.



What is the volume of the cube?

- A 216 in.<sup>3</sup>
- B 576 in.<sup>3</sup>
- C 729 in.<sup>3</sup>
- D 1728 in.<sup>3</sup>

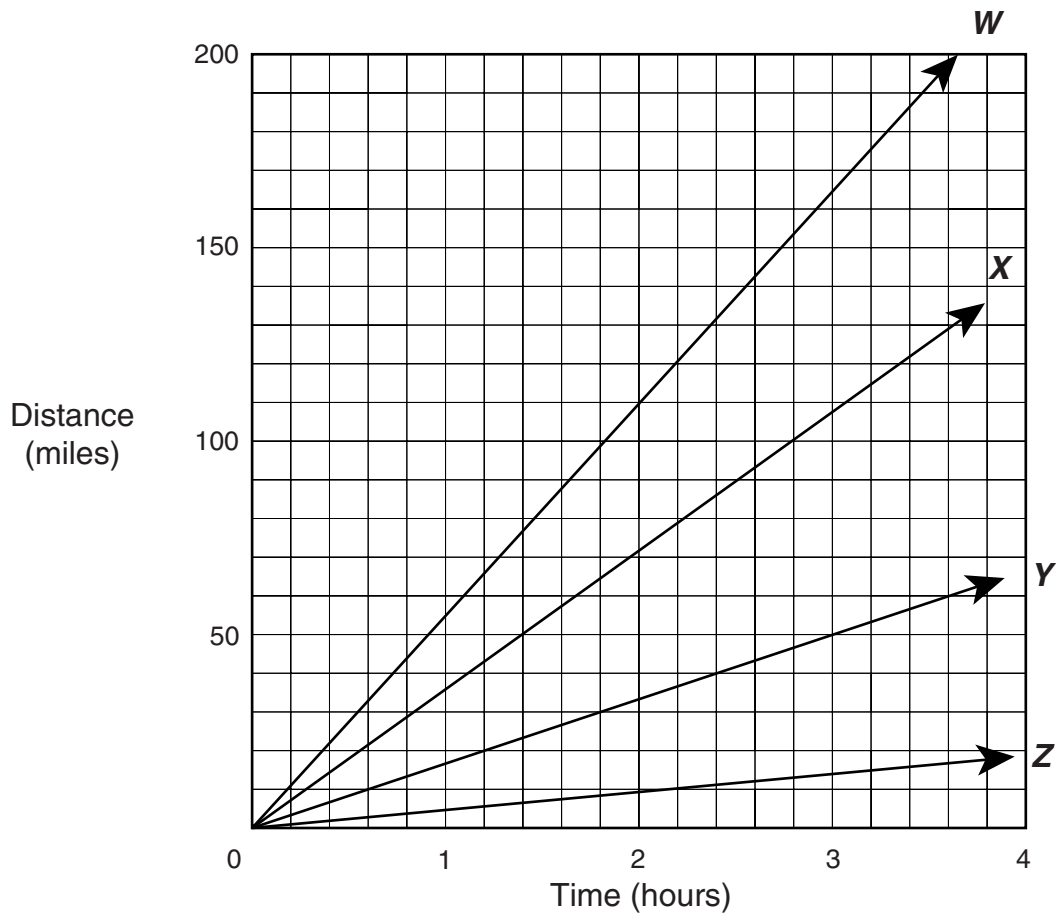
- 38 In a town, there is a small garden shaped like a triangle, as shown below. The side of the garden that faces Sixth Street is 80 feet in length. The side of the garden that faces Third Avenue is 30 feet in length.



What is the approximate length of the side of the garden that faces Elm Street?

- F 35 ft
- G 40 ft
- H 85 ft
- J 110 ft

- 39 In the distance formula  $d = rt$ ,  $r$  represents the rate of change, or slope. Which ray on the graph best represents a slope of 55 mph?



- A W
- B X
- C Y
- D Z

- 40 The cost of renting a DVD at a certain store is described by the function

$$f(x) = 4x + 3$$

in which  $f(x)$  is the cost and  $x$  is the time in days. If Lupe has \$12 to spend, what is the maximum number of days that she can rent a single DVD if tax is not considered?

- F 1
- G 2
- H 3
- J 7

- 41 A math club decided to buy T-shirts for its members. A clothing company quoted the following prices for the T-shirts.

Math Club T-Shirts

Number of T-Shirts	Total Cost (dollars)
10	75
15	105
20	135

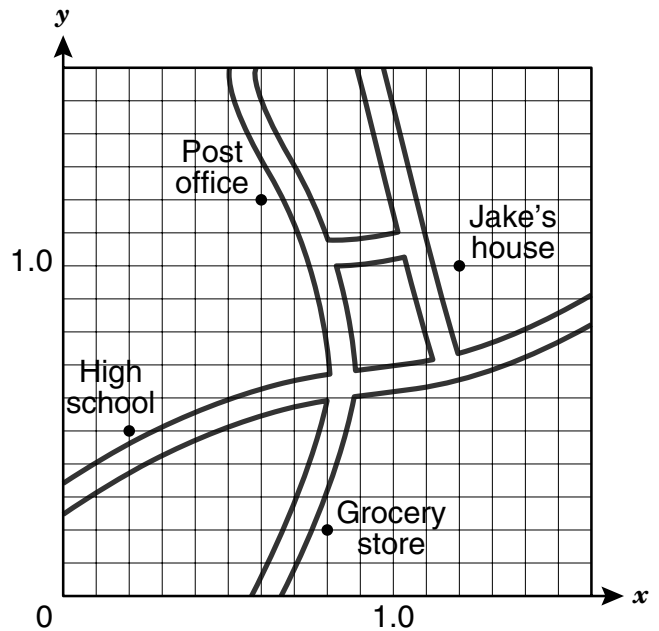
Which equation best describes the relationship between the total cost,  $c$ , and the number of T-shirts,  $s$ ?

- A  $c = 6.75s$
- B  $c = 7.00s$
- C  $c = 2s - 20$
- D  $c = 15 + 6s$

- 42 For a car traveling at a speed of 50 miles per hour, the relationship between the distance traveled,  $d$ , and the time traveled,  $t$ , is described by the function  $d = 50t$ . Which statement is true?

- F The time traveled depends on the distance traveled.
- G The distance traveled depends on the time traveled.
- H The speed of the car depends on the distance traveled.
- J The speed of the car depends on the time traveled.

- 43 Jake made a map of his neighborhood for a school project. He placed a grid over the map.

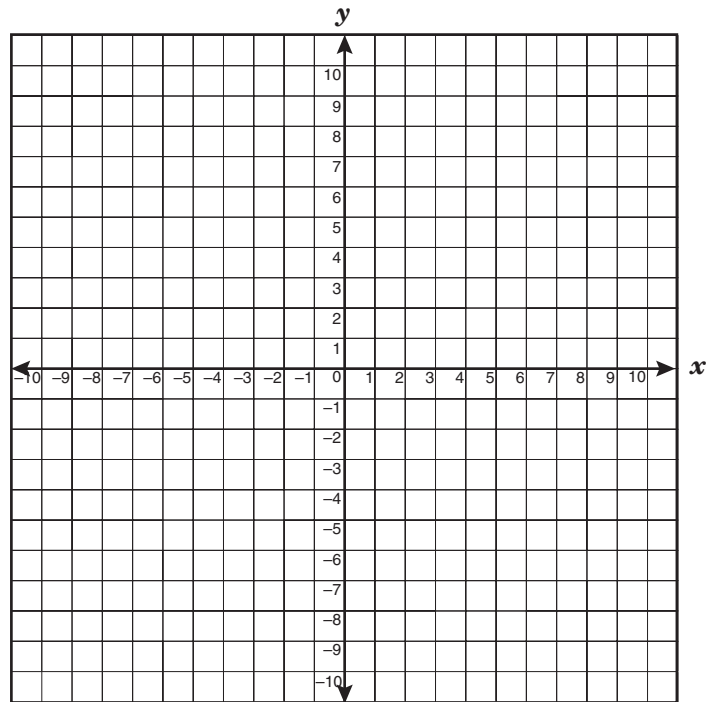


Which coordinate point best represents the post office?

- A (6, 12)
- B (12, 6)
- C (1.2, 0.6)
- D (0.6, 1.2)



44 Which linear function includes the points  $(-3, 1)$  and  $(-2, 4)$ ?



**F**  $f(x) = 3x + 10$

**G**  $f(x) = \frac{1}{3}x + 2$

**H**  $f(x) = 3x - 6$

**J**  $f(x) = -3x + 1$

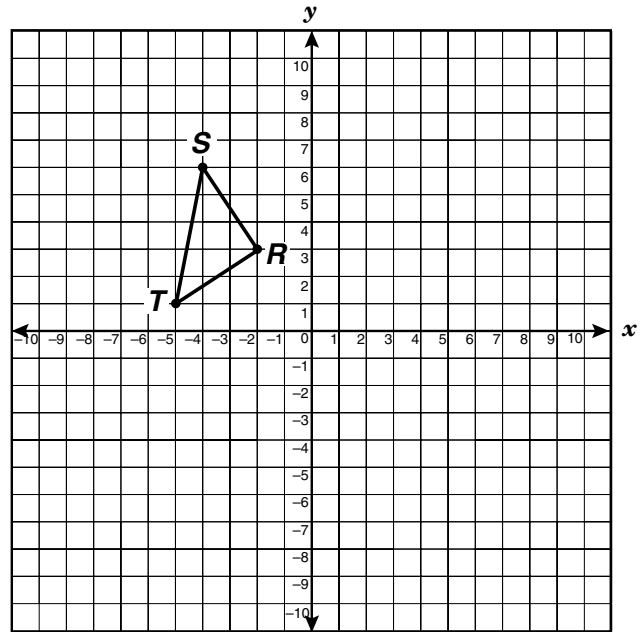
45 The Alejo family budgeted \$2000 for their vacation. Their budget consisted of \$800 for travel costs and \$75 per day for other expenses. Which inequality represents the number of days,  $x$ , the family could have stayed on vacation?

- A  $800 + 75x \leq 2000$
- B  $800x + 75 \geq 2000$
- C  $800x - 75 \geq 2000$
- D  $800 - 75x \leq 2000$

46 The area of a rectangle is given by the equation  $2l^2 - 5l = 18$ , in which  $l$  is the rectangle's length. What is the length of the rectangle?

- F 1.5
- G 2
- H 4.5
- J 6

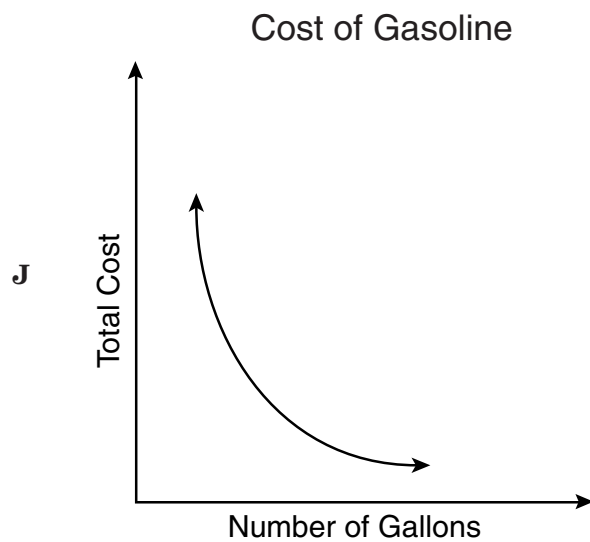
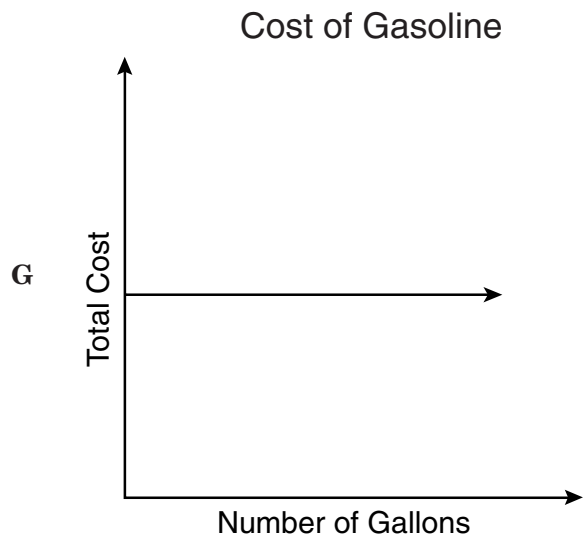
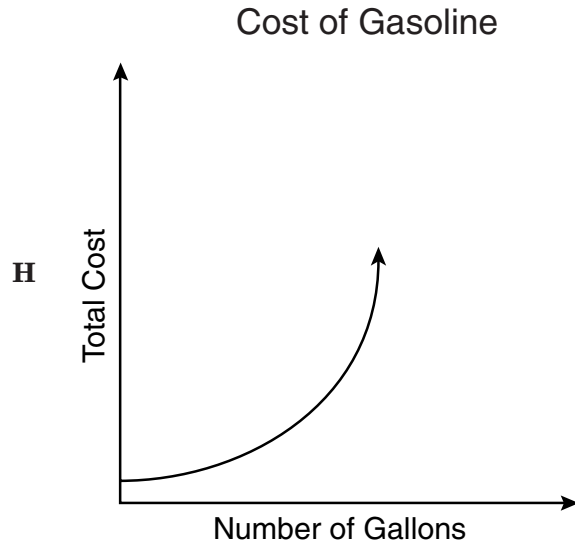
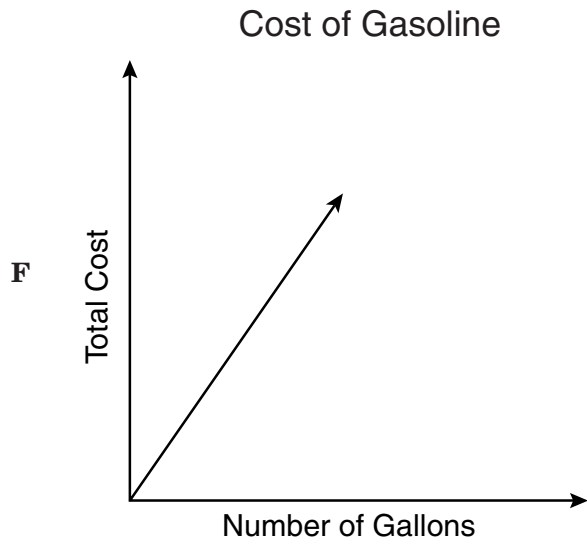
47  $\triangle RST$  is shown on the coordinate plane below.



Find the coordinates of the vertices of the image of  $\triangle RST$  reflected across the  $y$ -axis.

- A  $(-2, -3), (-4, -6), (-5, -1)$
- B  $(2, 3), (4, 6), (5, 1)$
- C  $(0, 3), (-2, 6), (-3, 1)$
- D  $(2, -3), (4, -6), (5, -1)$

- 48 Identify the graph that best represents the relationship between the number of gallons of gasoline Mr. Johnson purchased at \$1.49 a gallon and the total cost of his gasoline.



- 49 Students in a science class recorded lengths of a stretched spring, as shown in the table below.

Length of Stretched Spring

Distance Stretched, $x$ (centimeters)	Weight, $y$ (newtons)
0	0
2	10
4	20
7	35
9	45
10	50

Which equation best represents the relationship between distance stretched,  $x$ , and the weight on the spring,  $y$ ?

- A  $y = -5x$
- B  $y = \frac{5}{x}$
- C  $y = 5x^2$
- D  $y = 5x$

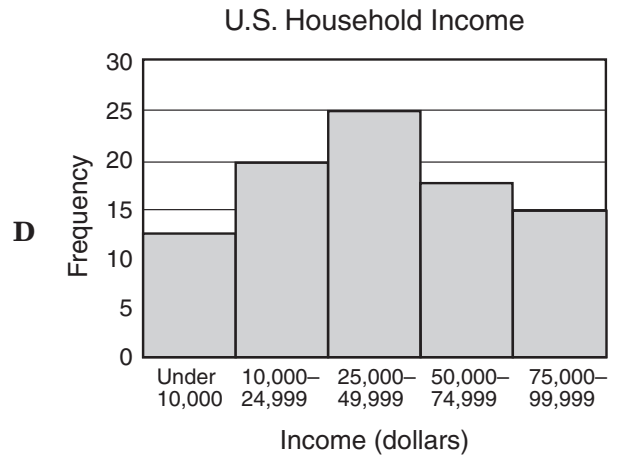
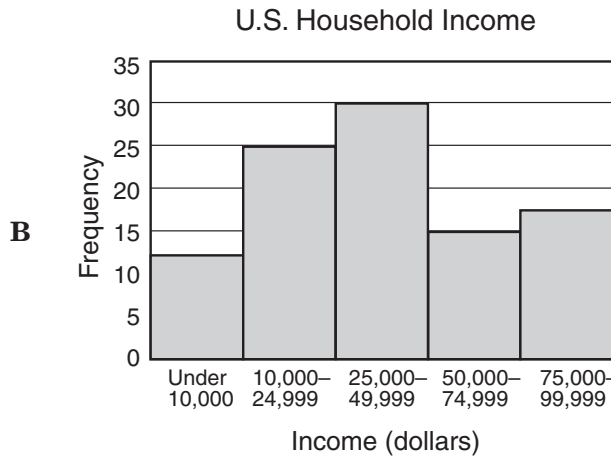
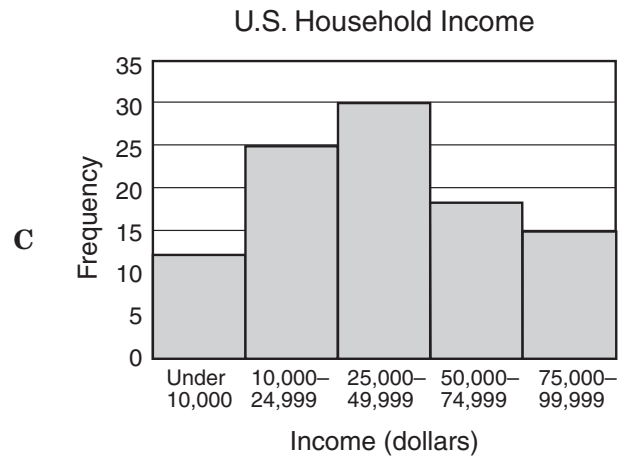
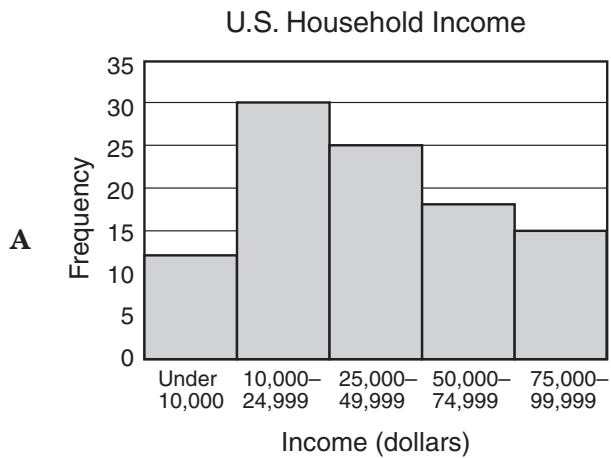
- 50 Passengers on many commercial flights may make calls from a telephone provided by the airline. On a certain airline a call costs \$3 to connect plus \$2 for each minute. Which equation best represents  $c$ , the total cost for a call that lasts  $m$  minutes?

- F  $m = 3 + 2c$
- G  $c = 3 + 2m$
- H  $m = 2 + 3c$
- J  $c = 2 + 3m$

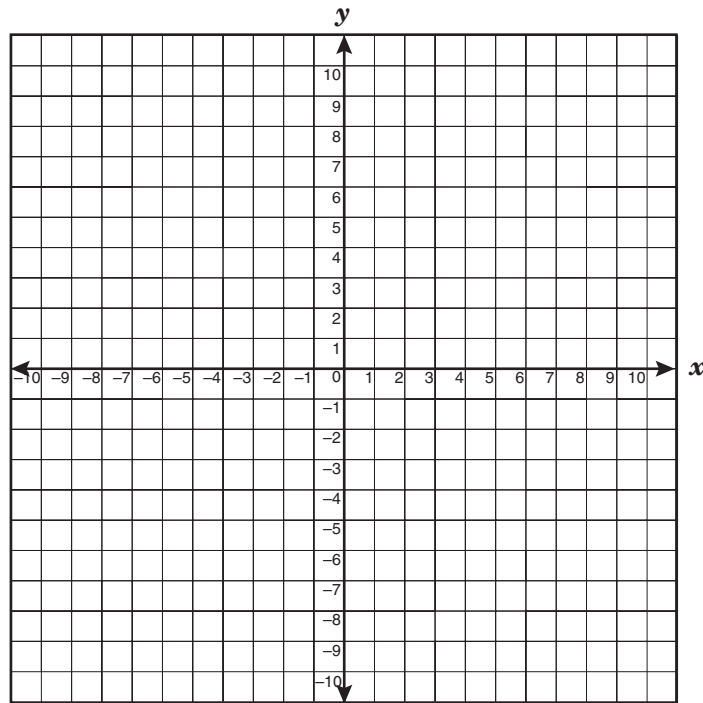
51 Which histogram best reflects the data shown in the table?

U.S. Household Income

Income Range	Frequency
Under \$10,000	### ## II
\$10,000–24,999	### ## ## ## ##
\$25,000–49,999	### ## ## ## ## ##
\$50,000–74,999	### ## ## III
\$75,000–99,999	### ## ##
Total	100 Households



52 When graphed, which function would appear to be shifted 2 units up from the graph of  $f(x) = x^2 + 1$ ?



**F**  $g(x) = x^2 - 1$

**G**  $g(x) = x^2 + 3$

**H**  $g(x) = x^2 - 2$

**J**  $g(x) = x^2 + 2$

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS  
ON THE ANSWER DOCUMENT.



