



Practice Test A

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

While dining out, it is customary to leave a 15% tip. If your dinner bill is \$25, which tip should you leave?

- A** \$1.50
- B** \$3.75
- C** \$4.00
- D** Not here

SAMPLE B

The edge of a cube measures 2.1 inches. To the nearest tenth of a cubic inch, what is the volume of the cube?

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

				.			
0	0	0	0		0	0	0
1	1	1	1		1	1	1
2	2	2	2		2	2	2
3	3	3	3		3	3	3
4	4	4	4		4	4	4
5	5	5	5		5	5	5
6	6	6	6		6	6	6
7	7	7	7		7	7	7
8	8	8	8		8	8	8
9	9	9	9		9	9	9



**Practice Test A**

- 1** Charles and Jenna took turns driving while on vacation. By the end of their vacation, they had driven about 900 miles, with Jenna driving about half as many miles as Charles. Which statement is reasonable, based on this information?
- A** Jenna drove 295 miles and Charles drove 610 miles.
- B** Jenna drove 610 miles and Charles drove 295 miles.
- C** Jenna drove 590 miles and Charles drove 305 miles.
- D** Jenna drove 600 miles and Charles drove 280 miles.
- 2** Tickets to the school play cost \$5 for adults and \$2 for students. The 500 tickets sold for last weekend's three performances generated \$1300 in revenue. Which system of equations could be used to find the number of adult tickets a and student tickets s that were sold?
- F** $a + s = 500$
 $5a - 2s = 800$
- G** $a + s = 500$
 $5a + 2s = 1300$
- H** $a + s = 1300$
 $5a + 2s = 500$
- J** $a + s = 500$
 $2a + 5s = 1300$
- 3** Alyssa's monthly cell phone bill can be modeled by using the equation $b = 29 + 0.09m$, where m is the number of minutes used and b is the bill. Alyssa must choose between a monthly increase of \$1 and an increase of \$.01 per minute used. How many minutes per month must she talk on her cell phone in order for the \$1 increase to be the better choice?
- A** 29
- B** 100
- C** 101
- D** 129
- 4** Logan and Sydney have gardens in the shape of similar rectangles. The ratio of the lengths of corresponding sides is 2:3. Which choice represents the ratio of areas of the gardens?
- F** 2:3
- G** 4:9
- H** 6:9
- J** 10:25





Practice Test A

5 Which type of figure will tessellate a plane?

- A Regular octagon
- B Ellipse
- C Circle
- D Parallelogram

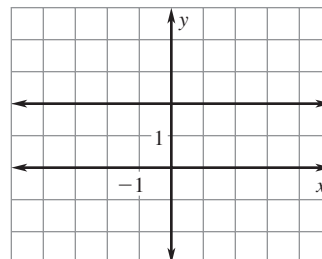
6 The chart on the back of a paint can gives the painter the following information.

Area to be painted (ft²)	250	500	1000	1500
Number of cans	1	2	4	6

Which equation represents the relationship between a , the area to be painted, and c , the number of cans of paint needed?

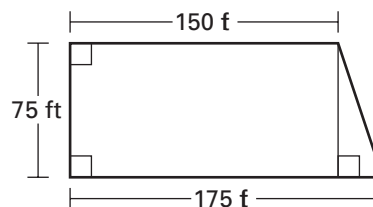
- F $c = a + 250$
- G $c = 250a$
- H $c = a - 250$
- J $c = \frac{a}{250}$

7 Which function is graphed below?



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

8 What is the area of Gabrielle's yard shown in the figure below?



- F 12,187.5 ft²
- G 13,125 ft²
- H 150,210 ft²
- J 1,968,750 ft²

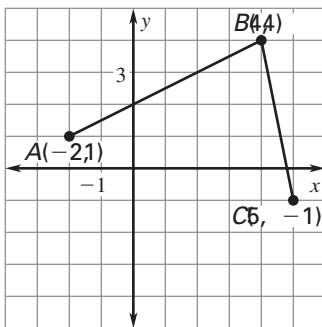


Practice Test A

- 9** Bailey's new car gets between 20 and 26 miles per gallon of gasoline. Its gas tank holds 12 gallons. Which inequality represents the range of distances d that Bailey can travel on one tank of gas?

A $240 \leq d \leq 312$
B $220 \leq d \leq 286$
C $100 \leq d \leq 130$
D $32 \leq d \leq 36$

- 10** Mr. Hernandez drew the following diagram to help locate his home. He knows that points A , B , C , and the location of his house form a parallelogram. Which ordered pair represents the location of his home?



F $(3, 0)$
G $(0, -3)$
H $(-1, -4)$
J $(-2, -5)$

- 11** Isaac randomly sampled 24 students from among a group of 120 students. The table shows how many of the 24 students were wearing no earrings, one earring, two earrings, or three or more earrings.

Number of earrings	0	1	2	3 or more
Number of students	4	6	6	8

If Isaac's sample accurately reflects the habits of the entire group of 120 students, how many total students were wearing three or more earrings?

A 40
B 30
C 20
D 10

- 12** A hotel has 400 rooms with either a queen size bed or a king size bed. A room with a queen size bed costs \$75 per night. A room with a king size bed costs \$90 per night. When the hotel is full, the revenue generated by the hotel per night is \$31,500. How many rooms in the hotel have queen size beds?

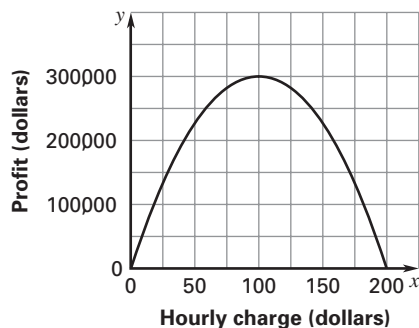
F 350
G 300
H 250
J 100





Practice Test A

- 13** The graph shows how a law firm's profits are affected by how much it charges per hour for its services.



Based on the graph, which of the following is true?

- A** The law firm should charge \$200 per hour to maximize its profits.
- B** The law firm cannot maximize its profits.
- C** If the law firm charges \$100 per hour, it will maximize its profits.
- D** If the law firm charges \$50 per hour, it will maximize its profits.

- 14** Juan tells Ella that one of the solutions to the equation given below represents his age. How old is Juan?

$$a^2 - 8a - 20 = 0$$

- F** 8
- G** 10
- H** 12
- J** 20

- 15** The table lists Sean's height on December 31 of four consecutive years. If the data is graphed and a line of best fit is drawn, which of the choices would best represent the slope of the line?

Years since 2000	1	2	3	4
Sean's height (in.)	52	56	59	63

- A** 1
- B** 2
- C** 4
- D** 57.5

- 16** Tyler has at most \$20 to spend on rides and games at the carnival. Each ride costs \$.75 and each game costs \$.50. Which inequality can be used to determine how many rides r and games g Tyler can pay for at the carnival?

- F** $(0.75 + r)(0.5 + g) > 20$
- G** $(0.75 + g)(0.5 + r) \leq 20$
- H** $0.75r + 0.5g \leq 20$
- J** $0.75rg + 0.5 \geq 20$



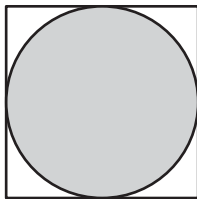


Practice Test A

- 17** In a game, 20 small balls are numbered 1 through 20. Two balls are drawn without replacement. To the nearest thousandth, what is the probability of a 4 followed by a 19 being drawn?

A 0.001
B 0.003
C 0.01
D 0.05

- 18** The square in the figure below has an area of $x^2 - 2x + 1$. What is the area of the inscribed circle shown in the figure?



F $(x - 1)\pi$
G $(x^2 + 2x + 1)\pi$
H $(x - 1)^2\pi$
J $\left(\frac{x - 1}{2}\right)^2\pi$

- 19** Connor drops a tennis ball from the top of a building. The height of the ball as it falls can be found using the equation $h(t) = -16t^2 + 90$, where t is the time measured in seconds and $h(t)$ is the height measured in feet. Which best describes the change in Connor's situation if the equation is changed to $h(t) = -16t^2 + 150$?

A Connor drops the ball from a building whose height is 150 feet.
B Connor throws the ball upward 60 feet.
C Connor releases the ball with a greater velocity.
D The wind affects the ball just as Connor releases it.

- 20** Which equation models the data in the table?

x	y
-2	5
-1	2
0	-1
1	-4

F $y = -3x - 1$
G $y = -3x + 1$
H $y = 7x - 1$
J $y = 3x - 1$





Practice Test A

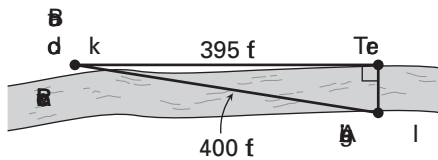
- 21** The table shows the annual commissions earned by four sales clerks at a company.

Clerk number	Commission
1	\$2,000
2	\$5,000
3	\$6,000
4	\$35,000

Which measure of central tendency best describes what a new sales clerk can expect to earn at the company in a year?

- A** Mean
- B** Median
- C** Mode
- D** Range

- 22** Abigail wants to know the width of the Rock River. She knows the distance from the boat dock to where she is standing and the distance from the boat dock to the tree directly across the river from her.



Using the diagram above, to the nearest foot, how wide is the Rock River?

- F** 25 ft
- G** 63 ft
- H** 78 ft
- J** 100 ft

- 23** Jesse left a 15% tip when he paid his lunch bill of d dollars. Which equation represents the total cost c of Jesse's lunch?

- A** $c = d + 0.15$
- B** $c = 0.15d$
- C** $c = 1.15d$
- D** $c = d + 1.15$

- 24** For which value of a is the statement $-a \leq a$ false?

- F** 5
- G** $\frac{2}{3}$
- H** 0
- J** $-\frac{1}{2}$

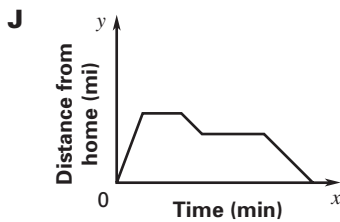
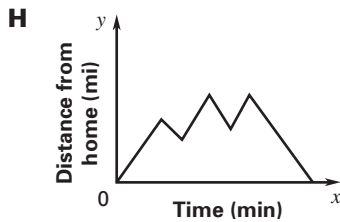
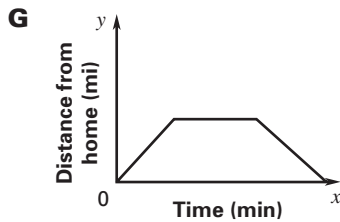
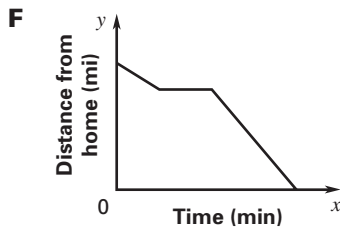


Practice Test A

25 While decorating the gym for a dance, the students decided they wanted one 15-foot blue ribbon for every three 20-foot red ribbons. They have 600 yards of red ribbon. How many yards of blue ribbon do they need?

- A** 100 yd
- B** 150 yd
- C** 300 yd
- D** 450 yd

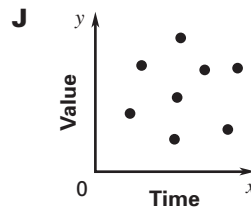
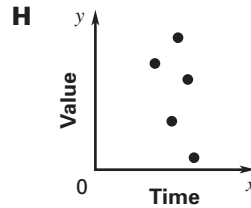
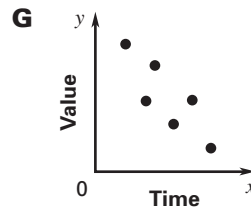
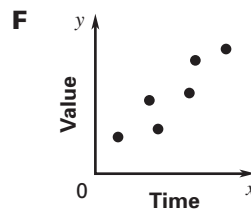
26 Mr. Thomas goes for a run. He stops once to tie his shoe and once to speak with a friend. Which graph could model Mr. Thomas's run?



27 How many vertices does a right rectangular prism have?

- A** 5
- B** 8
- C** 10
- D** 12

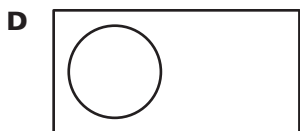
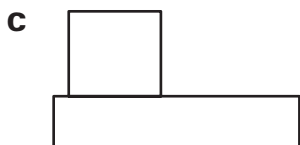
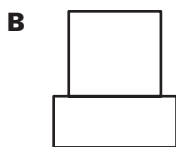
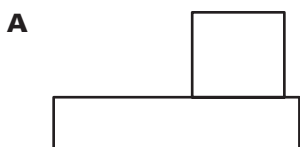
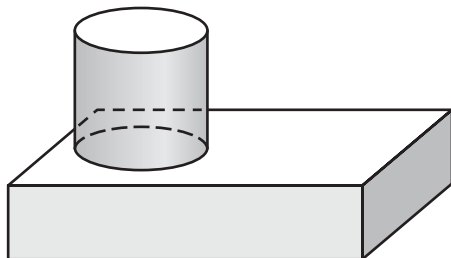
28 In general, as time passes, the value of a house increases. Which scatterplot best represents this situation?





Practice Test A

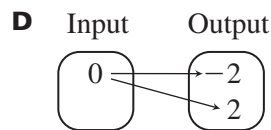
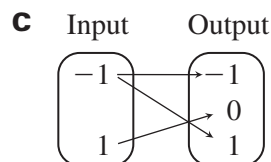
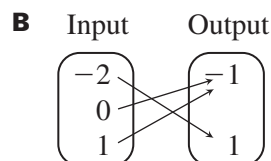
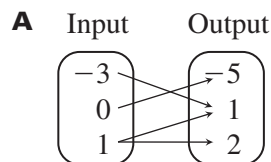
29 Which of the following is the top view of the figure shown below?



30 Ella's circular garden has an approximate area of 78.5 square feet. What is the approximate radius of her garden?

- F** 2.8 ft
- G** 5 ft
- H** 25 ft
- J** 78.5 ft

31 Which mapping illustrates a functional relationship between dependent and independent quantities?



32 Which of the following can be modeled by a linear function?

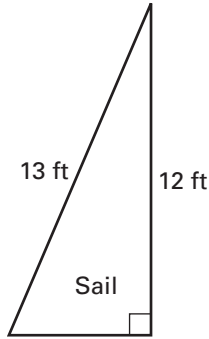
- F** The surface area of a cube is directly related to the square of the length of one edge.
- G** The volume of a sphere is directly related to the cube of the length of its radius.
- H** The distance d you travel in h hours is directly related to your speed.
- J** The area of a circle is directly related to the square of the length of its radius.

GO ON



Practice Test A

- 33** A sail on a boat has the dimensions shown in the figure below.



To the nearest tenth of a foot, what is the length of the unknown edge?

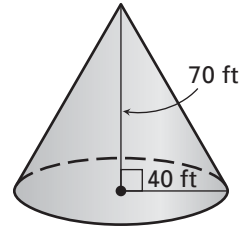
- A** 1.0 ft
- B** 4.0 ft
- C** 5.0 ft
- D** 17.7 ft

- 34** Juan is standing on the beach. He sees a bird that is directly above the pier located 110 yards from his position. If the bird is 60 yards above the pier, how far away is Juan from the bird? Round your answer to the nearest tenth.

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

				.			
0	0	0	0		0	0	0
1		1	1		1	1	1
2	2		2		2	2	2
3	3	3	3		3	3	3
4	4	4	4		4	4	4
5	5	5			5	5	5
6	6	6	6		6	6	6
7	7	7	7		7	7	7
8	8	8	8		8	8	8
9	9	9	9		9	9	9

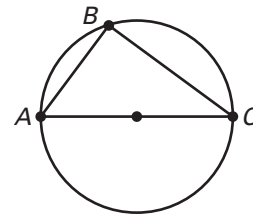
- 35** A farmer is storing corn in a cone-shaped bin as seen in the figure below.



What is the approximate volume of the bin?

- A** 117,000 ft³
- B** 288,000 ft³
- C** 323,000 ft³
- D** 352,000 ft³

- 36** A right triangle is inscribed in a circle, with $AB = 3$ centimeters and $BC = 4$ centimeters. The radius of the circle is 2.5 centimeters.



Approximately what percent of the area of the circle does the triangle occupy?

- F** 13%
- G** 25%
- H** 31%
- J** 61%





Practice Test A

- 37** The length of a rectangle is $n + 1$ and the width is $n - 1$. The table below summarizes the lengths, widths, and areas of several rectangles for different values of n .

n	Length, $n + 1$	Width, $n - 1$	Area
2	3	1	3
3	4	2	8
4	5	3	15
5	6	4	24

Which expression, when evaluated for the given values of n , produces the correct areas?

- A** $n^2 + 1$
- B** $n^2 + 2n - 5$
- C** $n^2 - n + 1$
- D** $n^2 - 1$
- 38** A circular pizza has a diameter of 14 inches and is cut into 8 equal slices. To the nearest tenth of a square inch, which answer represents the area of one slice?
- F** 615.8 in.²
- G** 44.0 in.²
- H** 22.0 in.²
- J** 19.2 in.²

- 39** What is the next character in the sequence shown below?

A V L G L A A
A V L G L A A
R R B B E E G G L L A A
R R B B E E G G L L A A

- A** S
- B** A
- C** 2
- D** A

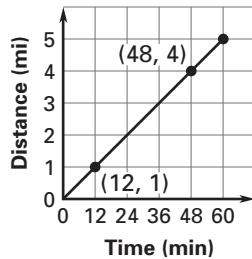
- 40** Which equation represents the line passing through the point $(-2, 1)$ with a slope of -3 ?
- F** $y = -3x - 5$
- G** $y = -\frac{1}{3}x - 5$
- H** $y = -3x - 2$
- J** $y = -3x + 1$





Practice Test A

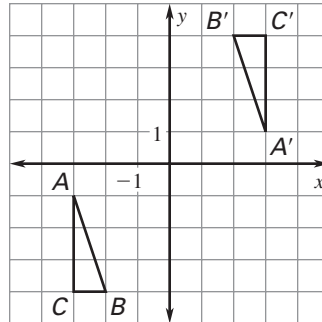
- 41** The graph below represents the relationship between time and distance for Nathan's morning run.



Which best describes the meaning of the slope of the line segment?

- A** The slope represents the fact that Nathan is running on a steep surface.
- B** The slope represents the total distance Nathan runs.
- C** The slope represents the total time of Nathan's run.
- D** The slope represents the rate at which Nathan is running.
- 42** Which best describes the effect on the graph of $y = \frac{1}{3}x^2$ when the equation is changed to $y = -4x^2$?
- F** The graph is narrower and opens down.
- G** The graph is congruent but opens down.
- H** The graph is translated left and opens down.
- J** The graph is wider and it opens down.

- 43** In the figure below, $\triangle A'B'C'$ is the result of which transformation of $\triangle ABC$?



- A** First reflect it across the y -axis and then translate it 5 units up.
- B** Rotate it 90° about the origin.
- C** First reflect it across the x -axis and then reflect it across the y -axis.
- D** First translate it 5 units up and then translate it 6 units right.
- 44** If rectangle $ABCD$ is similar to rectangle $EFGH$, which of the following statements *must* be true?
- F** Rectangle $ABCD$ is larger than rectangle $EFGH$.
- G** The sum of the measures of the interior angles of rectangle $ABCD$ is less than the sum of the measures of the interior angles of rectangle $EFGH$.
- H** The ratios of corresponding sides are the same.
- J** Rectangle $ABCD$ is congruent to rectangle $EFGH$.

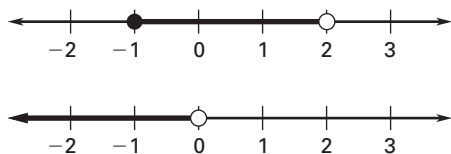


Practice Test A

- 45** The back of a truck can hold 2500 cubic feet of cargo. Forty rectangular boxes with dimensions 3 feet by 2 feet by 4 feet are already loaded on the truck. How many rectangular boxes with dimensions 5 feet by 3 feet by 6 feet will still fit on the truck?

A 13
B 15
C 17
D 19

- 46** Given the two graphs below, which inequality represents their intersection?

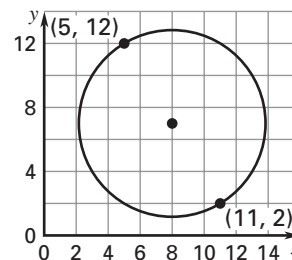


F $x < 2$
G $-1 \leq x < 2$
H $x < 0$
J $-1 \leq x < 0$

- 47** Ethan's mother measured and wrote down Ethan's height h , in inches, on each of his first 10 birthdays. What is a reasonable domain for these heights?

A $0 \leq h \leq 84$
B $19 \leq h \leq 96$
C $26 \leq h \leq 60$
D $0 \leq h \leq 30$

- 48** Mr. Bailey is building a circular ice skating rink. He has drawn a sketch on a grid of the location and located the endpoints of one diameter, as seen in the figure below. He now needs to know the slope of the diameter that is **perpendicular** to this diameter.



Which of the following is the desired slope?

F (8, 7)
G $\frac{3}{5}$
H $\frac{7}{8}$
J $-\frac{5}{3}$



Practice Test A

- 49** The city where Leslie lives has a 3% local sales tax on purchases. What is the tax on a CD costing \$12.15?

A \$12.51
B \$3.65
C \$.56
D \$.36

- 50** Below are the first five rows of Pascal's Triangle.

```

      1
     1 1
    1 2 1
   1 3 3 1
  1 4 6 4 1

```

Which pair of numbers would be the third and fourth numbers in the next row?

F 10, 10
G 10, 5
H 5, 10
J 1, 5

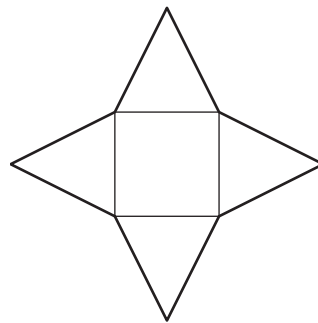
- 51** The table below shows the scores of some of Mr. Lopez's students on their last test.

Score	Students
80	7
82	5
85	2
90	8
100	1

Given that the table is only a partial listing of scores for the class, which inequality represents the possible number of students s who earned a score of 85 or more?

A $s \geq 11$
B $s \geq 16$
C $s > 11$
D $s \leq 12$

- 52** The net shown below can be folded to represent which figure?



F Square pyramid
G Prism
H Cone
J Triangular pyramid

GO ON

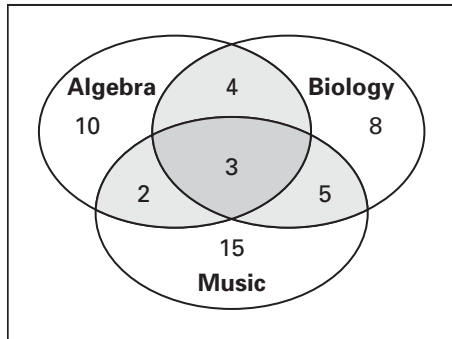
**Practice Test A**

- 53** A plane is flying at an altitude of 8000 feet. The pilot wants to increase the plane's altitude by 4000 feet over the next 10 miles. To the nearest tenth of a degree, what should be the plane's angle of elevation as it gains altitude at a constant rate?
- A** 3.1°
B 4.3°
C 27.2°
D 85.7°
- 54** Consider the sequence of numbers given below. Which algebraic expression will produce the terms of the sequence relative to their position p in the sequence?
- $-1, -3, -5, -7, \dots$
- F** $p - 2$
G $-2p$
H $-p + 1$
J $-2p + 1$
- 55** The length of one edge of a square is given by $3x^2y^3$. Which answer represents the area of the square?
- A** $12x^2y^3$
B $9x^4y^9$
C $9x^4y^6$
D $12x^8y^{12}$
- 56** The volume of a pyramid or cone can be found by using the equation $V = \frac{1}{3}Bh$, where B is the area of the base and h is the height. Which answer correctly represents the equation solved for the variable h ?
- F** $h = \frac{3V}{B}$
G $Bh = 3V$
H $h = \frac{1}{3}VB$
J $h = \frac{V}{3B}$



Practice Test A

- 57** The Venn diagram below indicates the enrollment patterns of students who are taking Music, Algebra, and/or Biology at a small high school.



How many students are taking all three classes?

- A** 8
B 7
C 5
D 3
- 58** Brianna is constructing a convex quadrilateral. She is told that the measures of three of the interior angles are 40° , 160° , and 20° . What is the measure of the fourth interior angle?
- F** 100°
G 140°
H 220°
J 280°
- 59** What is the solution of the system of linear equations given below?
- $$y = 4$$
- $$-2x + 7y = 28$$
- A** $(4, 0)$
B $(4, \frac{36}{7})$
C $(0, 4)$
D $(-28, 4)$
- 60** A polygon has a perimeter of 53.6 inches. If the lengths of the edges of the polygon are multiplied by a factor of 2.1, what is the perimeter of the resulting polygon?
- F** 55.7 in.
G 62 in.
H 107.2 in.
J 112.56 in.

