

Sample Test 2

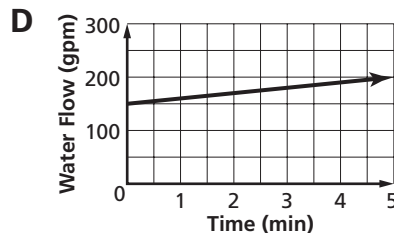
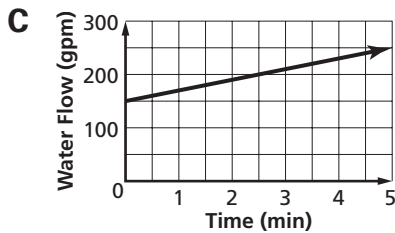
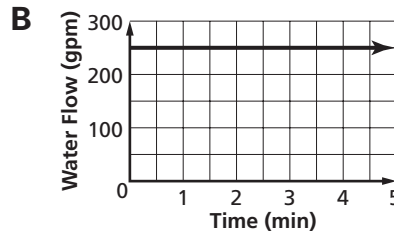
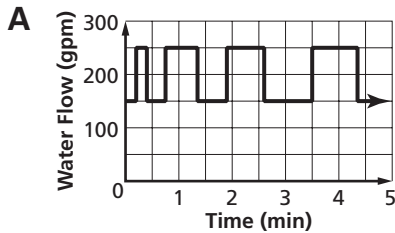
Test Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

Firefighters Ronnie and Tenita are fighting a house fire. Ronnie is spraying 150 gallons of water per minute (gpm). Tenita's firehose sprays 100 gpm, and the nozzle is always either closed (0 gpm) or fully open (100 gpm) as she fights the fire. Use this information to answer Questions 1–3.

- 1 Which graph shows water output from both hoses at time t ? 1 _____



- 2 What is the slope of the line showing the water flow in gallons per minute at time t , if we ignore the moments when Tenita is opening or closing the nozzle? 2 _____

- A** The slope is 250 gpm.
B The slope is 100 gpm.
C The slope is 10 gpm.
D The slope is 0, because water flow at a given t is constant.

- 3 Todd is operating the pump on the fire engine that supplies Ronnie and Tenita. How much water must Todd be able to deliver to them at the most? 3 _____

- A** 50 gpm **B** 160 gpm
C 250 gpm **D** 1500 gpm

- 4 Simplify $(2x + 3) + (x + 14)$. 4 _____

- A** $3x + 17$
B $2x^2 + 42$
C $2x^2 + 31x + 42$
D $34x + 17$



Sample Test 2 (continued)

Test Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

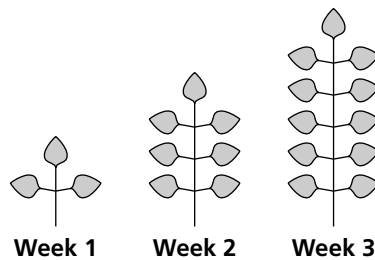
- 5 The speed S of the tip of a spinning airplane propeller in feet per minute is the product of the total length ℓ of the propeller in feet, π , and the propeller's spin rate R in revolutions per minute. Which is an equation for this relationship that gives propeller tip speed S in feet per second? **5** _____

A $S = \frac{\pi\ell R}{60}$ **B** $\frac{S}{60} = \pi\ell R$ **C** $S = \pi\ell R$ **D** $\frac{S}{\pi} = 60\ell R$

- 6 What is the greatest common factor in the terms $14x^2$ and $-70x$? **6** _____
- A** $14x^2$ **B** $14x$ **C** 14 **D** -70

- 7 How many leaves will this pondweed plant have in week 17? **7** _____

- A** 71
B 69
C 67
D 65



- 8 Factor $-x^2 - 3x + 10$. **8** _____
- A** $1 - (x + 2)(x + 5)$ **B** $(x + 2)(x - 5)$
C $(-x + 2)(x + 5)$ **D** $(x - \sqrt{10})^2$

- 9 Woody knows that the cost of the fuel his helicopter uses c is the product of the amount of time t his engine runs, the average amount of jet fuel f that his turbine engine consumes per hour, and the cost per gallon g of the fuel. Which equation expresses this? **9** _____

A $c \times g = f \times t$ **B** $c = \frac{ft}{g}$
C $f = \frac{g^2}{t}$ **D** $c = tfg$

- 10 Solve for y if $y = |-4|$. **10** _____
- A** ± 4 **B** 4 **C** -2 **D** -4

- 11 If the number of people n who stop at a yard sale is related to the day's high temperature T by $n = T + 14$, how many people will attend a yard sale when the high temperature for the day is 93°F ? **11** _____
- A** 107 **B** 93 **C** 79 **D** 14



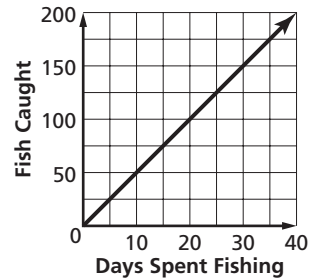
Sample Test 2 (continued)

Test Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

Sted sees that the number of fish he has caught during each of the past several years is a fairly constant function of the number of days each year he has spent fishing. Use the graph to answer Questions 12 and 13.



12 How many fish can Sted expect to catch in a year in which he spends 17 days fishing?

- A 17
- B 47
- C 52
- D 85

12 _____

13 What are the domain and range of this function?

- A The domain is 0 to 40 and the range is 0 to 200.
- B The domain is 0 to 200 and the range is 0 to 40.
- C This function has no domain or range; the graph continues.
- D The domain is 0 to the maximum number of days he could go fishing in a year, and the range is 0 to the maximum possible number of fish that he would catch.

13 _____

14 What does the equation $C = 2\pi r$ mean?

- A The value of π decreases as the radius of a circle increases.
- B The circumference of a circle is twice the product of its radius r and the constant pi.
- C The value of π increases as the radius of a circle increases.
- D The circumference of a circle is twice the square of its radius r multiplied by the constant pi.

14 _____

15 Simplify $(x(5 + 3) - 8x)^2$.

- A $8x^2 + 8x$
- B $8x^2 - 8x$
- C 0
- D $64x - 8x^2$

15 _____



Sample Test 2 (continued)

Test Practice

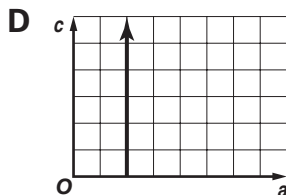
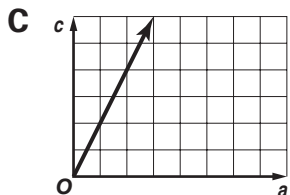
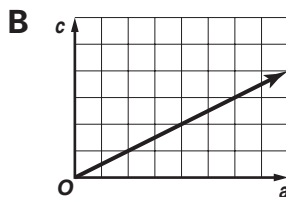
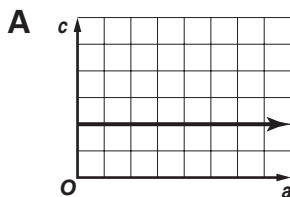


Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

In a 30° - 60° - 90° triangle, the length c of the longest side is twice the length a of the shortest side. Use this information to answer Questions 16–18.

16 Which graph shows c as a function of a ?

16 _____



17 What is the slope of the line $c = 2a$?

17 _____

- A** 2
C a

- B** $2a$
D 0.5

18 Is $c = 2a$ a relation or a function?

18 _____

- A** It is neither a relation nor a function. A triangle is not a graph.
B It is a function that specifies c in terms of a .
C It is a relation but not a function, because a vertical line can cut a triangle at more than one point.
D It is a function with an unknown domain.

19 Karla draws a graph that shows how often she must wash her car in the spring as a linear function of the number of birds that nest in her trees. In years with no nesting birds, she washes it once a month. There were 5 nests one spring, and Karla washed her car six times a month. What does the slope of her line show?

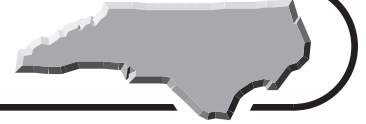
19 _____

- A** the number of birds in each nest
B the total number of times that she washes her car
C that she must wash her car one additional time per month for each bird nest in her trees
D that she must wash her car six additional times per month for every 5 bird nests in her trees



Sample Test 2 (continued)

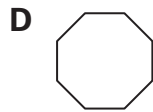
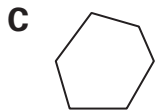
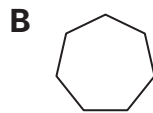
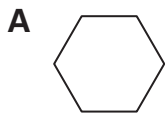
Test Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

20 What is the next figure in this sequence?

20 _____



21 Simplify $\sqrt{(17 - 5 \times 3)^2}$.

21 _____

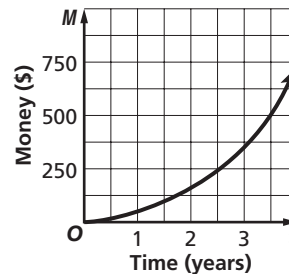
A 2

B 4

C 6

D 36

22 The amount of money M in Etta's savings account has increased over time t according to the function shown in the graph. She deposits the same amount from every paycheck, and she has done so for several years. The line has been smoothed to even out the small jumps in her account from her deposits. Which of the following is true about the effect of regular deposits into an account with compound interest?



22 _____

A M increases to a certain point and then stops growing.

B M increases according to an exponential function.

C M increases according to a linear function.

D M increases in an unpredictable way.

23 Which of the following is the same as 2^7 ?

23 _____

A 14

B 49

C 72

D 128

24 Factor $5x^2 - 25x - 180$.

24 _____

A $(x + 6)(x - 6)(5x)$

B $(x + 5)(x - 36)$

C $(x + 30)(5x - 60)$

D $5(x + 4)(x - 9)$

Go on

Sample Test 2 (continued)

Test Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

The number N of raincoats Lorri's department store sells each month follows the formula $3r + 40$, when r is the rainfall in inches during the month. Use this equation to answer Questions 25 and 26.

25 How many additional raincoats do they sell each month for every inch of rain that falls? 25 _____

- A r B 3
 C $3r$ D 40

26 If the highest recorded monthly rainfall at Lorri's store is 15 inches, what is the range of the function? 26 _____

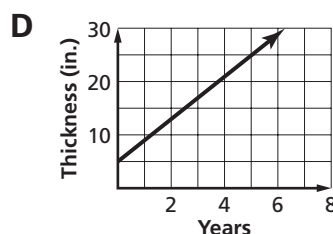
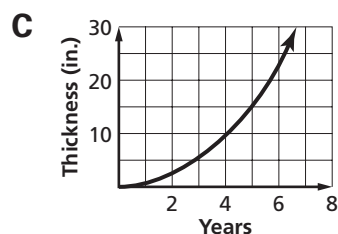
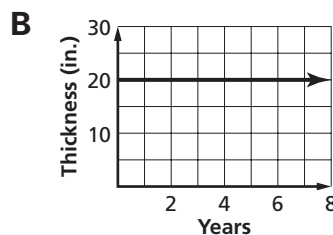
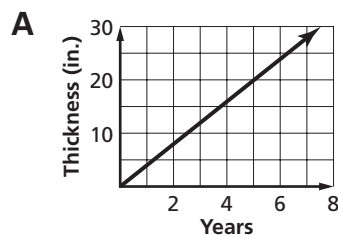
- A from 0 to 15 B 15
 C from 40 to 85 D 85

Ceil's 3 by 5 inch index cards are $\frac{1}{32}$ inch thick. Use this information to answer Questions 27 and 28.

27 If Ceil starts with a stack of recipe cards 5 inches thick and writes an average of 128 new recipes on index cards per year, what will be the thickness of her stack of index cards t years later? 27 _____

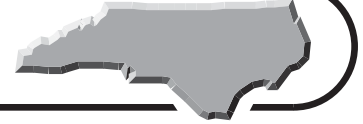
- A $\frac{t}{32}$ in. B $\frac{128}{32}t + 5$ in.
 C $32t$ in. D $32t + 5$ in.

28 Which graph shows the growth of Ceil's stack of recipe cards over time? 28 _____



Sample Test 2 (continued)

Test Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

Bob saw that the amount of poetry he had learned and the amount of time he had spent teaching other people in math, history, and English could be described by the following table. Use the table to answer Questions 29–31.

Period	Teaching (hours per year)	Poetry Learned (lines per year)
High School	40	250
Military Service	100	600
College	20	400
Working, before children	40	200
Working, with children at home	1,200	40
Working, with children grown	100	100
Retired	400	200

- 29** When did Bob learn the most new poetry each year? **29** _____
- A** during high school and college
B during military service
C while his children were at home
D when he retired
- 30** When did Bob spend the most time teaching others each year? **30** _____
- A** during high school and college
B during military service
C while his children were at home
D when he retired
- 31** Is the amount of poetry Bob learned each year a positive linear function of the number of hours he spent teaching others? **31** _____
- A** No; when he spent more time teaching, he learned less new poetry himself.
B No; there is no relation at all between poetry and teaching.
C No; however, there is a positive, linear relation between hours spent teaching and new lines of poetry learned.
D Yes; this is a positive linear function.



Sample Test 2 (continued)

Test Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

32 As a group of students studied the sharks in an aquarium tank, one of the students asked the aquarium manager, Tara, how the large tank had been built. Tara answered, “First, we had to make the floor strong enough. There are 6,000 gallons of seawater in this tank. At about $8\frac{1}{2}$ pounds per gallon, that means that the water alone weighs more than 25 tons.” What expression represents Tara’s calculation? **32** _____

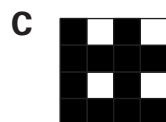
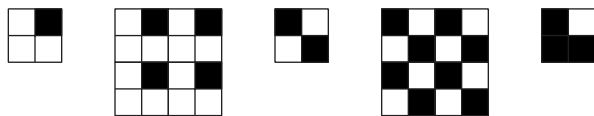
A $\sqrt{6,000 \text{ gallons} \times 2,000 \text{ pounds per ton} \times 8.5 \text{ gallons}}$

B $\frac{6,000 \text{ gallons}}{1 \text{ ton}}$

C $\frac{6,000 \text{ gallons} \times 8.5 \text{ pounds per gallon}}{2,000 \text{ pounds per ton}}$

D $\frac{6,000 \text{ gallons}}{8.5 \text{ pounds}}$

33 What is the next figure in this sequence? **33** _____



34 Simplify $\frac{121x^3 - 77x^2 + 99x}{11x}$. **34** _____

A $11x^3 - 7x^2 - 9$

B $121x^2 - 77x + 99$

C $11x^2 - 77x - 9$

D $11x^2 - 7x + 9$

35 Simplify $(x + 4) - (2 - x)$. **35** _____

A 2

B $2x - 2$

C $2x + 2$

D $6 - x$



Sample Test 2 (continued)

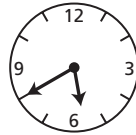
Test Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

36 What is the next figure in this sequence?

36 _____



A



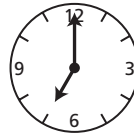
B



C



D



37 Simplify $9\sqrt{27}$.

37 _____

A $3\sqrt{9}$

B $9\sqrt{3}$

C $27\sqrt{3}$

D 27

Kelli leans an adjustable extension ladder against a wall so that the distance a from the base of the wall to the top of the ladder is four times the distance b from the base of the wall to the foot of the ladder. The ladder is extended to be c feet long. Use this information to answer Questions 38 and 39.

38 The Pythagorean Theorem states that $a^2 + b^2 = c^2$. If $a = 20$ feet, what is c to the nearest foot?

38 _____

A 50 ft

B 25 ft

C 21 ft

D 20 ft

39 If it is safest to set up a ladder with $a = 4b$ whenever possible, what determines the best length (maximum value of c) of extension ladder to buy, for values of a of less than about 50 feet?

39 _____

A It should be exactly a feet long, or it will be too heavy.

B It should be $2a$ feet long, or it will usually be too short.

C Although a and b can be changed, an adjustable ladder will always have the same value for c .

D It should be able to extend to a few feet longer than the greatest expected value of a .

40 What is the greatest common factor in the terms $2x^2$ and $-8x$?

40 _____

A $2x$

B $8x$

C 2

D 8



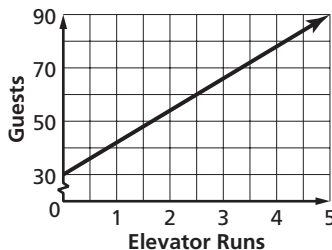
Sample Test 2 (continued)

Test Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

There are already 30 guests on the roof of a high-rise building in Charlotte for a summer social. An express elevator is bringing up more guests in groups. The graph illustrates how the number of guests at the party increases with each run of the elevator. Use the graph to answer Questions 41 and 42.



41 Which is the slope of the line that contains the points on the graph? **41** _____

- A** -30
C 12

- B** 2
D 30

42 What does the slope of the line represent? **42** _____

- A** the number of guests arriving with each elevator run
B the initial number of guests
C the number of floors in the high rise
D the number of minutes it takes the elevator to reach the roof

43 Which property justifies the following? **43** _____

$$38x + 17 = 50$$
$$38x = 50 - 17$$

- I** Multiplicative inverse Property
II Distributive Property
III Commutative Property
IV Subtraction Property

- A** I only
C II and III
- B** II only
D IV only

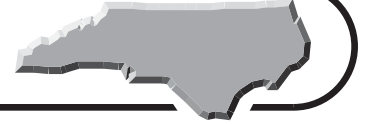
44 Which of these is the equation of the line through $(-3, 1)$ with slope $-\frac{5}{4}$? **44** _____

- A** $y = -\frac{5}{4}x - \frac{11}{4}$
B $y = -3x - \frac{5}{4}$
C $y = -\frac{5}{4}x$
D $-\frac{5}{4}y = x$



Sample Test 2 (continued)

Test Practice

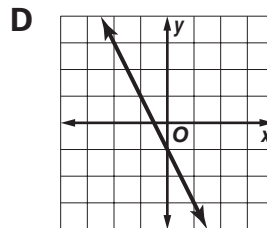
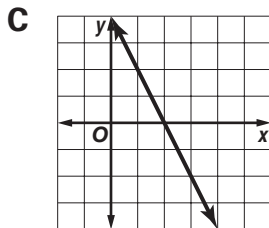
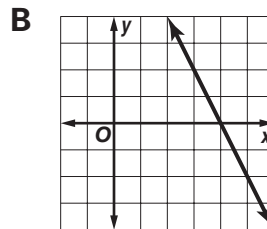
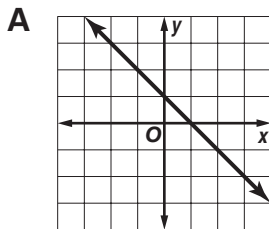


Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

- 45** Alfonso is a sales manager for a company that rents beach condominiums on Emerald Isle. Alfonso's weekly goal is for his sales team to average \$9,000 in sales each day this week. Their sales for the first four days of this week were \$8,200, \$9,100, \$9,300, and \$7,400. Which inequality can Alfonso use to find the minimum sales his team must achieve on Friday to average \$9,000 each day for the week? **45** _____
- A** $\frac{x - 34,000}{5} \leq 9,000$ **B** $\frac{34,000 + x}{5} \geq 9,000$
C $\frac{34,000 + x}{5} \leq 9,000$ **D** $\frac{x - 34,000}{5} \geq 9,000$

- 46** The graph of $y = -2x + k$ intercepts the x -axis at $(3, 0)$. What equation results from changing k so that the x -intercept is $(4, 0)$? **46** _____
- A** $y = -2x + 6$ **B** $y = -2x + 4$
C $y = -x + 4$ **D** $y = -2x + 8$

- 47** Which of these is the graph of the line through $(3, -2)$ with slope -2 ? **47** _____



- 48** Which best describes the difference(s) between the graphs of $f(x) = -5x + \frac{3}{4}$ and $g(x) = -10x + \frac{3}{4}$? **48** _____
- A** The graph of $f(x)$ is twice as steep as the graph of $g(x)$.
B The graph of $f(x)$ is half as steep as the graph of $g(x)$.
C The graph of $f(x)$ has a y -intercept of 5 while $g(x)$ has a y -intercept of 10.
D Both A and C are true.



Sample Test 2 (continued)

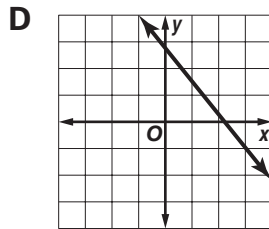
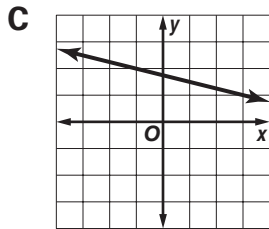
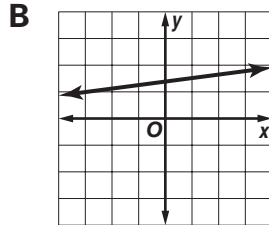
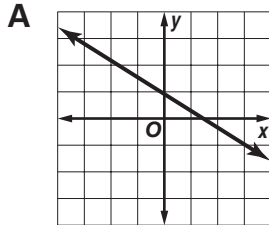
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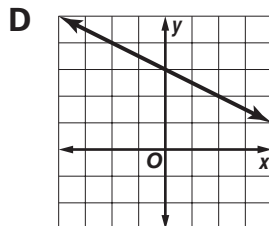
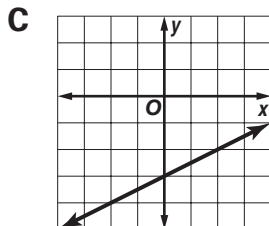
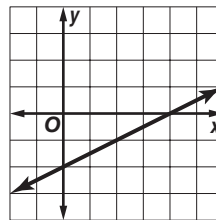
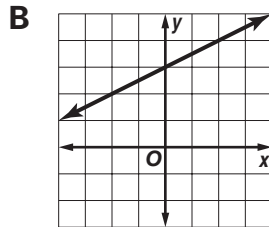
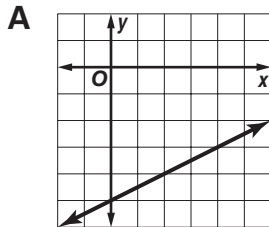
49 Which of these is the graph of the line through $(3, -1)$ and $(1, \frac{3}{2})$?

49 _____



50 To the right is the graph of $y = mx - 2$. Which of these is the graph of $y = mx - 3$?

50 _____



51 Which of these is the equation of the line through $(-3, 1)$ and $(-1, 3)$?

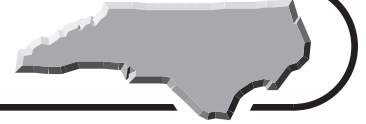
51 _____

- A** $y = x + 1$
- B** $y = x + 4$
- C** $y = -x$
- D** $y = 3x + 1$



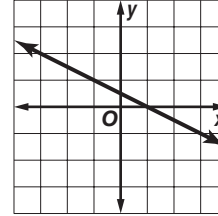
Sample Test 2 (continued)

Test Practice

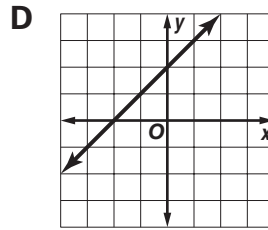
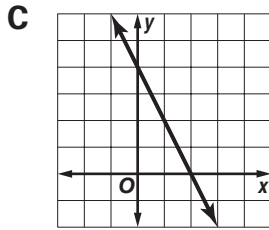
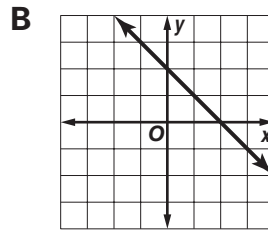
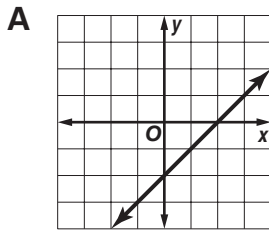


Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

- 52 To the right is a graph with a slope of $-\frac{1}{2}$ that intercepts the x -axis at $(1, 0)$. Which of these is a graph with a slope of -1 that intercepts the x -axis at $(2, 0)$?



52 _____



- 53 A traffic engineer in Raleigh uses a quadratic function $D(t)$ to model the time delay D in minutes that occurs t seconds after an accident for commuters on Interstate 40 after an accident occurs at rush hour. Which feature of the graph of this function will show the engineer the maximum time delay for commuters?

53 _____

- A** the x -coordinate of the vertex
- B** the y -coordinate of the vertex
- C** the smaller x -intercept
- D** the larger x -intercept

- 54 Which set of data is linear?

54 _____

A

x	-1	0	1	2
y	7	12	22	27

B

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

C

x	-1	0	1	2
y	2	3	2	3

D

x	-1	0	1	2
y	54	52	50	48



Sample Test 2 (continued)

Test Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

The number of new releases and older stock of DVDs, videos, and games rented one week at Alden's video store in Raleigh is shown in matrices A and B below. Use the matrices to answer Questions 55–58.

$$A = \begin{matrix} & \begin{matrix} \text{Monday through Friday} \\ \text{DVDs} & \text{Videos} & \text{Games} \end{matrix} \\ \begin{matrix} \text{new} \\ \text{older} \end{matrix} & \begin{bmatrix} 150 & 130 & 22 \\ 85 & 103 & 7 \end{bmatrix} \end{matrix} \quad B = \begin{matrix} & \begin{matrix} \text{Saturday and Sunday} \\ \text{DVDs} & \text{Videos} & \text{Games} \end{matrix} \\ \begin{matrix} \text{new} \\ \text{older} \end{matrix} & \begin{bmatrix} 140 & 180 & 22 \\ 65 & 88 & 5 \end{bmatrix} \end{matrix}$$

55 During the week, which items did people rent the most from Alden? **55** _____

- A** new-release DVDs **B** new-release videos
C older DVDs **D** new-release games

56 Which category had more rentals on the weekend than during the rest of the week? **56** _____

- A** older DVDs **B** older videos
C new-release DVDs **D** new-release videos

57 If you add matrices A and B to form matrix R , what does R represent? **57** _____

- A** the number of DVDs and videos rented in one week
B the number of new releases rented in one week
C the number of DVDs, videos, and games rented in one week
D the number of DVDs, videos, and games Alden has in his store

58 Which matrix is R ? **58** _____

$$\begin{matrix} \mathbf{A} & \begin{matrix} \text{new} \\ \text{older} \end{matrix} & \begin{matrix} \text{DVDs} & \text{Videos} & \text{Games} \\ \begin{bmatrix} 150 & 130 & 22 \\ 85 & 103 & 7 \end{bmatrix} \end{matrix} & \mathbf{B} & \begin{matrix} \text{new} \\ \text{older} \end{matrix} & \begin{matrix} \text{DVDs} & \text{Videos} & \text{Games} \\ \begin{bmatrix} 290 & 310 & 44 \\ 150 & 191 & 12 \end{bmatrix} \end{matrix} \\ \mathbf{C} & \begin{matrix} \text{new} \\ \text{older} \end{matrix} & \begin{matrix} \text{DVDs} & \text{Videos} & \text{Games} \\ \begin{bmatrix} 190 & 310 & 44 \\ 140 & 191 & 12 \end{bmatrix} \end{matrix} & \mathbf{D} & \begin{matrix} \text{new} \\ \text{older} \end{matrix} & \begin{matrix} \text{DVDs} & \text{Videos} & \text{Games} \\ \begin{bmatrix} 140 & 180 & 22 \\ 65 & 88 & 5 \end{bmatrix} \end{matrix} \end{matrix}$$

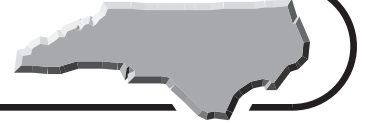
59 Annushka throws a ball for her dog Jezebel at time t . The equation $y = -16t^2 + 20t + 4$ can be used to model the path of the ball. About how long is the ball in the air? **59** _____

- A** 0.5 s **B** 1 s
C 1.5 s **D** 2 s



Sample Test 2 (continued)

Test Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

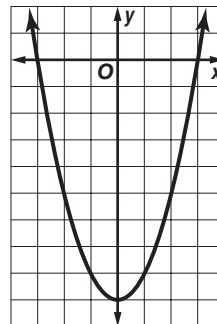
A parking meter on Hillsborough Street in Raleigh contains 31 coins, with a total value of \$5.80. The coins are all dimes and quarters. Use this information to answer Questions 60 and 61.

- 60** Which system of equations can be used to find the number of dimes d and quarters q ? **60** _____
- | | |
|---|--|
| A $10d + 25q = 580$
$10d + 25q = 31(d + q)$ | B $35(d + q) = 580$
$d + q = 35$ |
| C $10d + 25q = 580$
$d + q = 31$ | D $10q + 25d = 580$
$d + q = 35$ |

- 61** How many quarters are in the meter? **61** _____
- | | |
|-------------|-------------|
| A 11 | B 13 |
| C 16 | D 18 |

- 62** Which set of equivalent equations can be used to eliminate the x terms when solving Equation 1 and Equation 2 by the elimination method? **62** _____
- Equation 1: $3x - 2y = 4$
Equation 2: $-7x + y = -1$
- | | |
|---|--|
| A $3x - 2y = 4$
$-14x + 2y = -2$ | B $2x - y = 3$
$-7x + y = -1$ |
| C $21x - 14y = 28$
$-21x + 3y = -3$ | D $4x - 2y = 4$
$-14x + 2y = -4$ |

- 63** Which are the intercepts and vertex of this graph? **63** _____
- | |
|---|
| A x -intercept 9; y -intercepts -3 and 3 ;
vertex $(0, -9)$ |
| B x -intercepts -3 and 3 ; y -intercept 3 ;
vertex $(0, 9)$ |
| C x -intercepts -3 and 3 ; y -intercept -9 ;
vertex $(0, -9)$ |
| D x -intercepts -9 and 9 ; y -intercept 3 ;
vertex $(9, 0)$ |



Go on

Sample Test 2 (continued)

Test Practice

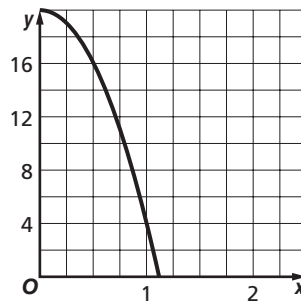


Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

- 64** The solution set of a quadratic equation is $\{\emptyset\}$. How many x -intercepts does the graph of the equation have? **64** _____

A -1
B 0
C 1
D 2

- 65** A pigeon builds a nest on the sill of a second-story office building window in Rocky Mount. During a storm, an egg falls out of the nest. The height of the egg in feet above the sidewalk x seconds after the fall can be modeled by the function $y = -16x^2 + 20$. How can you use the graph of the function to find the height of the nest above the sidewalk?



65 _____

A Find the value of the y -intercept of the graph.
B Find the value of the x -intercept.
C Find the value of x when $y = 0$.
D Find the slope of the graph at the y -intercept.

- 66** Tamika serves each breakfast customer 3 strips of bacon with their eggs, grits, and toast. She is expecting a large number of breakfast customers one morning so Tamika makes a graph to show the total strips of bacon she will need depending on the number of breakfast orders. Which is a true statement about her graph? **66** _____

A The y -intercept is 3.
B The x -intercept is 3.
C The graph passes through $(3, 3)$.
D The graph has a slope of 3.

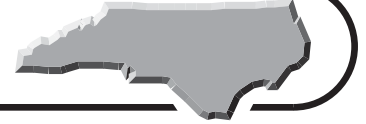
- 67** Which situation can be represented by a linear function? **67** _____

A the number of customers in a bank over an afternoon
B the number of eggs in x crates containing 24 eggs per crate
C the weight of an infant over 6 months
D the value of a savings account that earns interest compounded annually



Sample Test 2 (continued)

Test Practice

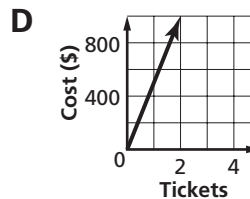
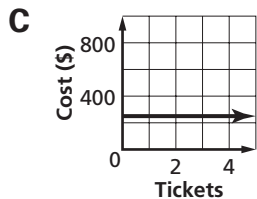
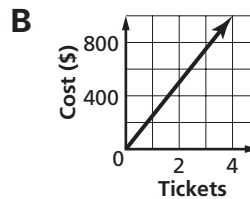
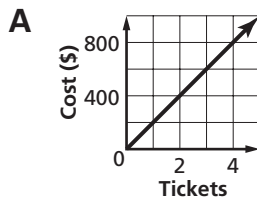


Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

- 68 The table shows the cost of airline tickets from Raleigh to Dallas, Texas, that Kate is buying for her family. Which is a graph of the data?

Number of Tickets	Total Cost (\$)
1	250
2	500
3	750

68 _____



- 69 Which of the following shows the expression $x^2 - x - 30$ correctly factored?

69 _____

- A** $(x + 5)(x + 6)$
B $(x - 5)(x - 6)$
C $(x - 5)(x + 6)$
D $(x + 5)(x - 6)$

- 70 Which equation best fits the data in the table?

70 _____

x	-2	-1	0	1	2	3
y	-6	-4	-2	0	2	4

- A** $y = x - 4$ **B** $y = 3x$
C $y = 2(x - 1)$ **D** $y = -3x + 1$

- 71 Which situation must be represented by a nonlinear function?

71 _____

- A** the distance traveled by an accelerating car
B the total cost of rabies shots for p puppies
C the number of bran muffins in m boxes of a dozen muffins
D the length of a desk as a function of time



Sample Test 2 (continued)

Test Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

The population of a town t years after a vacation resort is built can be modeled with the equation $p(t) = 45,500(1.2)^t$. Use this information to answer Questions 72 through 75.

72 What does $p(0)$ represent? 72 _____

- A the number of infants under 1 year old in the town
- B the year the resort was built
- C the number of tourists in the resort
- D the population when the resort was built

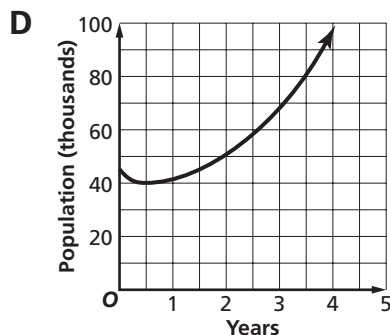
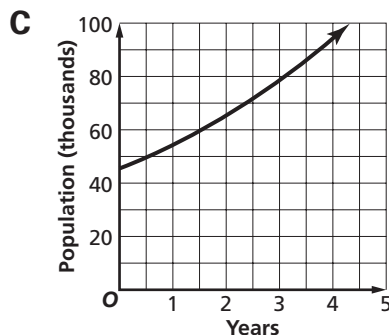
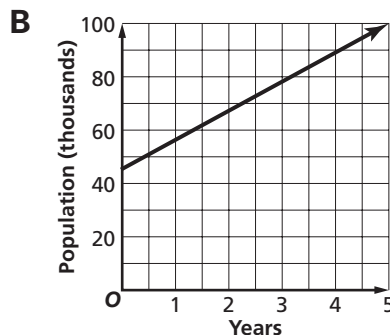
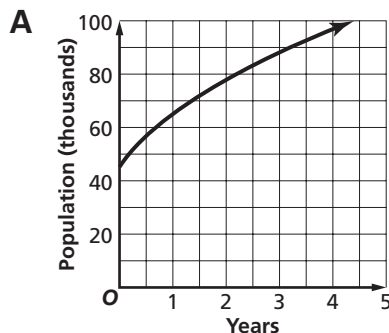
73 What was the initial population of the town when the resort was built? 73 _____

- A 45,500
- B 41,200
- C 37,916
- D 11,200

74 After how many years will the population be over 60,000? 74 _____

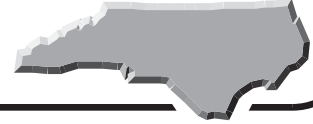
- A 1 yr
- B 2 yr
- C 3 yr
- D 4 yr

75 Which is the graph of this function? 75 _____



Sample Test 2 (continued)

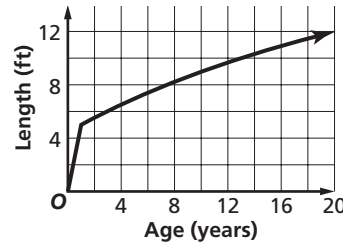
Test Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

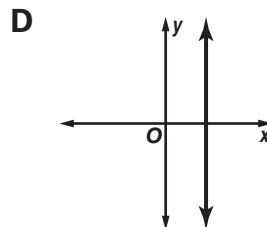
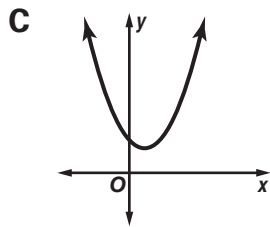
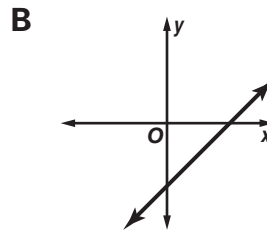
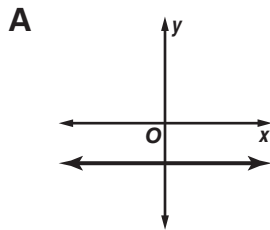
- 76** The graph models the length of Louise the python. Based on the graph, how long will Louise be when she is 20 years old?

- A** 12 ft
B 13 ft
C 14 ft
D 15 ft



76 _____

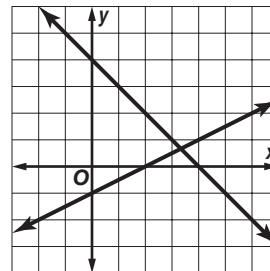
- 77** Which set of data is nonlinear?



77 _____

- 78** The solution set of which system of equations is graphed?

- A** $y < \frac{1}{2}x - 1$
 $y = -x + 4$
B $y = \frac{1}{2}x - 1$
 $y = -x + 4$
C $y > \frac{1}{2}x - 1$
 $y < -x + 4$
D $y = \frac{1}{2}x - 1$
 $y < -x + 4$



78 _____



Sample Test 2 (continued)

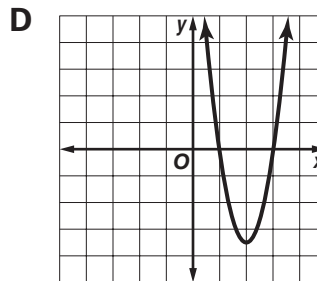
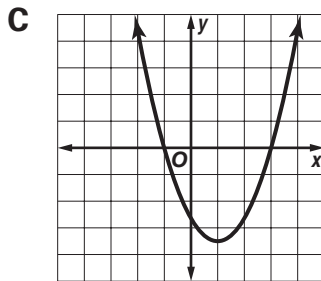
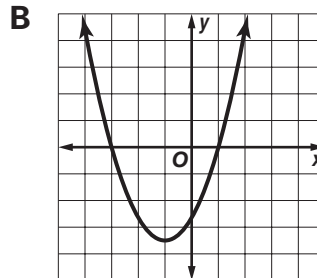
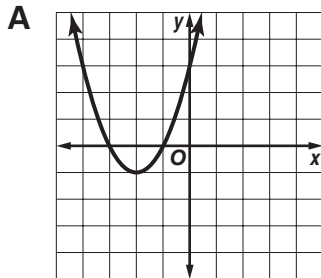
Test Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

79 Which graph shows that solutions of $0 = x^2 + 4x + 3$ are $\{-3, -1\}$?

79 _____



80 The graphs of four quadratic equations are shown. Which equation has two real roots?

80 _____

