

Algebra 1 CP Semester 1 Review**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

Write an algebraic expression for each verbal expression.

- | | |
|--------------------------|-------------------------------------|
| 1. the sum of 38 and m | 2. 35 less the product of 4 and x |
| a. $m \times 38$ | a. $35 + 4x$ |
| b. $38 \div m$ | b. $4x \times 35$ |
| c. $38 - m$ | c. $35 \div 4x$ |
| d. $38 + m$ | d. $35 - 4x$ |

Write a verbal expression for the algebraic expression.

3. $\frac{3}{5} + 2$
- the sum of three-fifths and two
 - the difference of three-fifths and two
 - the product of three-fifths and two
 - the quotient of three-fifths and two

Evaluate the expression.

4. $2 + 2(2)^2(5) + 8$
- | | |
|--------|-------|
| a. 50 | c. 88 |
| b. 106 | d. 90 |

Name the property used in the equation. Then find the value of n .

5. $4(7n) = 4$
- | | |
|---|--|
| a. Multiplicative Identity; $\frac{1}{7}$ | c. Multiplicative Inverse; $\frac{1}{4}$ |
| b. Additive Inverse; $\frac{1}{4}$ | d. Substitution; $\frac{1}{7}$ |

Use the Distributive Property to find the product.

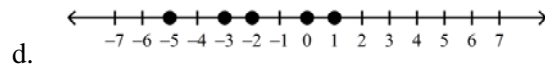
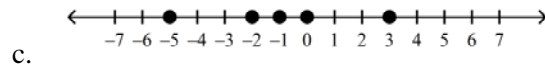
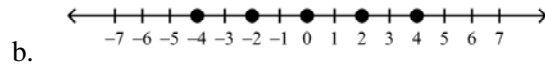
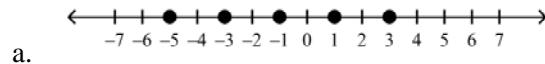
6. $8 \cdot 990$
- | | |
|---------|---------|
| a. 7840 | c. 7920 |
| b. 8080 | d. 7912 |

Simplify the expression. If not possible, write simplified.

7. $2(11d - 5)$
 a. simplified
 b. $22d - 10$
 c. $22d - 10d$
 d. $22d - 5$
8. $4(8n + 10d - 7d)$
 a. $32n + 68d$
 b. simplified
 c. $44nd$
 d. $32n + 12d$

Graph each set of numbers on the number line.

9. $\{-5, -3, -1, 1, 3\}$



The following table shows the monthly charges for subscribing to the local newspaper.

Number of Months	1	2	3	4	5
Total Cost (\$)	15.25	30.50	45.75	61.00	76.25

10. Use the data in the newspaper subscription table to find the cost of the subscription for one year.
 a. \$167.75
 b. \$183
 c. \$152.50
 d. \$182.90

Translate the sentence into an equation.

11. Four less than the product of eight and the number g is equal to ten more than g .
 a. $4 - 8g = 10 + g$
 b. $8g - 4 = 10g$
 c. $8g - 4 = 10 + g$
 d. $8(g - 4) = 10 + g$

Translate the equation into a verbal sentence.

12. $5(x - y) = 3y + 12$
- Five times the difference of x and y is 12 more than the product of 3 and y .
 - Five times the sum of x and y is 12 more than the product of 3 and y .
 - Five times the difference of x and y is 12 more than the quotient of 3 and y .
 - Five times x and y is 12 more than the product of 3 and y .
13. $8 - x = 2$
- Eight plus x is the same as two.
 - x minus eight is the same as two.
 - Eight increased by x is the same as two.
 - Eight minus x is the same as two.
14. $3c + (c + 4) = 127$
- Three times c plus the difference of c and four is 127.
 - Three times c plus the sum of c and four is 127.
 - Three plus c plus the sum of c and four is 127.
 - Three times c plus the product of c and four is 127.

Solve the equation. Then check your solution.

15. $119 = n - 66$
- 53
 - 186
 - 185
 - 185
16. $\frac{n}{54} = \frac{4}{9}$
- 24
 - $\frac{2}{3}$
 - $6\frac{4}{9}$
 - $121\frac{1}{2}$
17. $\frac{5}{9}d = \frac{9}{10}$
- $\frac{31}{90}$
 - $1\frac{31}{50}$
 - $\frac{1}{2}$
 - $\frac{50}{81}$
18. $\left(-2\frac{1}{7}\right)p = -3$
- $1\frac{2}{5}$
 - $6\frac{3}{7}$
 - $-1\frac{2}{5}$
 - $-6\frac{3}{7}$

Write an equation and solve each problem.

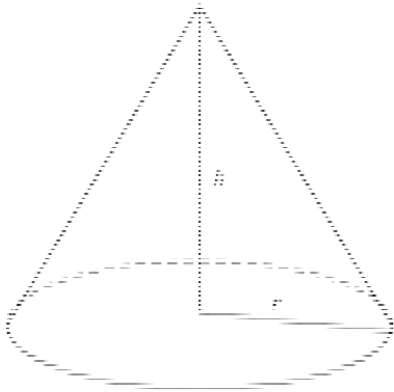
19. Fifty-six is twelve added to four times a number. What is the number?
- $56 + 12 = 4n$; 17
 - $56 = 12 + 4n$; 44
 - $56 = 12 + 4n$; 11
 - $56 = 12 - 4n$; 11

Solve the equation. Then check your solution.

20. $-58x - 26 = 8x - 230.6$
- 3.17
 - 3.3
 - 3.1
 - 3.1

21. $15(-42x + 40) = 15(-8x + 244)$
- | | |
|--------|------|
| a. -6 | c. 6 |
| b. 0.7 | d. 3 |
22. $\frac{1}{2}(15 + 7d) = -\frac{d}{4}$
- | | |
|------|-------|
| a. 3 | c. -4 |
| b. 2 | d. -2 |

Right Circular Cone



$$V = \frac{\pi r^2 h}{3}$$

23. What is the height of a right circular cone with a volume of 200 cubic inches and a radius of 5 inches? Round your answer to the nearest hundredth.
- | | |
|----------------|----------------------|
| a. 7 inches | c. 7.64 cubic inches |
| b. 7.64 inches | d. 24 inches |

The equation of a line containing the points $(a, 0)$ and $(0, b)$ is given by the formula $\frac{x}{a} + \frac{y}{b} = 1$.

24. Find x if the line contains the points $(6, 0)$ and $(0, -4)$ and $y = 4$.
- | | |
|-------------|------------------------|
| a. $x = 0$ | c. $x = -1\frac{1}{3}$ |
| b. $x = 12$ | d. $x = -2$ |

The circumference of a circle is given by the formula $C = 2\pi r$, where r is the measure of the radius.

25. Solve the formula for r .
- | |
|-------------------------|
| a. $r = 2\pi C$ |
| b. $r = 2\pi + C$ |
| c. $r = \frac{2\pi}{C}$ |
| d. $r = \frac{C}{2\pi}$ |

26. Find the radius of a circle if the circumference is 25 inches. Use 3.14 for π , and round your answer to the nearest hundredth if necessary.
- 3.98 inches
 - 157 inches
 - 4.17 inches
 - 3.78 inches

Two airplanes leave Denver, one traveling east at 700 miles per hour and one traveling west at 750 miles per hour. Let t represent the time since their departure.

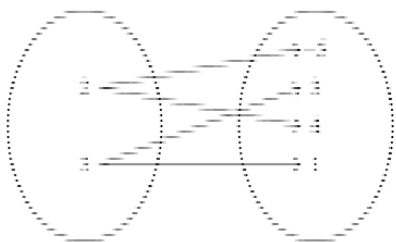
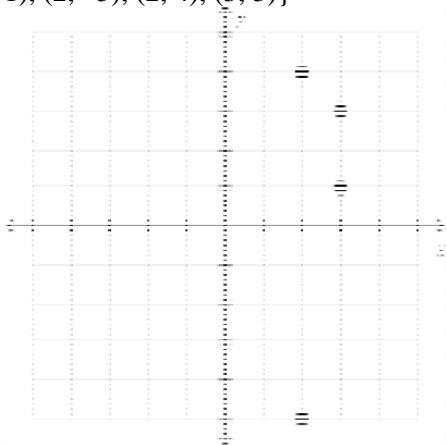
	r	t	$d = rt$
Eastbound			
Westbound			

27. Write an equation that could be used to determine when the airplanes will be 3625 miles apart.
- $700t + 750t = 3625$
 - $750t - 700t = 3625$
 - $3625 = 700t \times 750t$
 - $700t + 750(t + 1) = 3625$

Express each relation as a graph and a mapping. Then determine the domain and range.

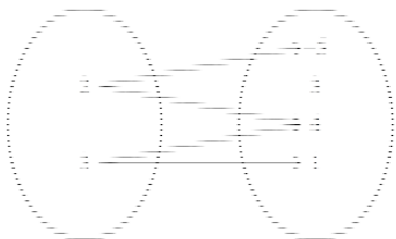
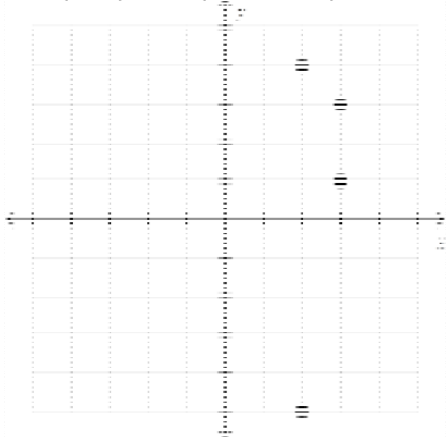
28. $\{(3, 1), (2, -5), (2, 4), (3, 3)\}$

a.



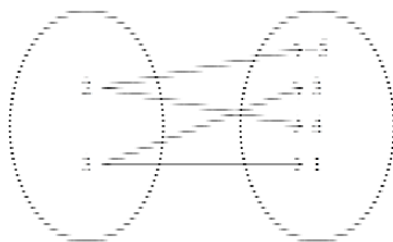
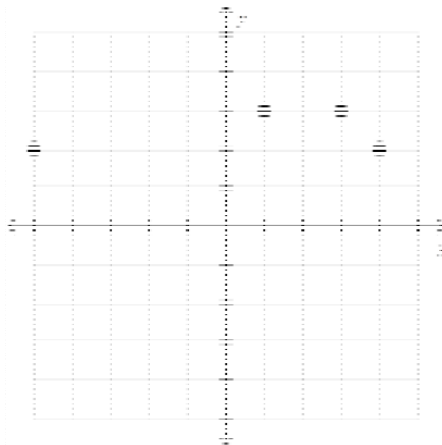
$D = \{2, 3\}; R = \{-5, 1, 3, 4\}$

b.



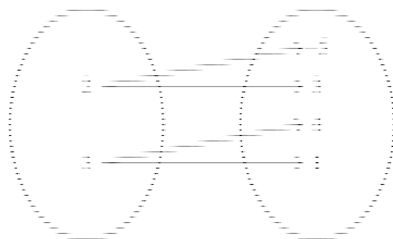
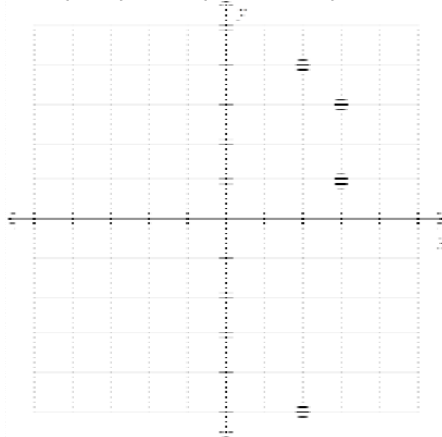
$D = \{2, 3\}; R = \{-5, 1, 3, 4\}$

c.



$D = \{2, 3\}; R = \{-5, 1, 3, 4\}$

d.

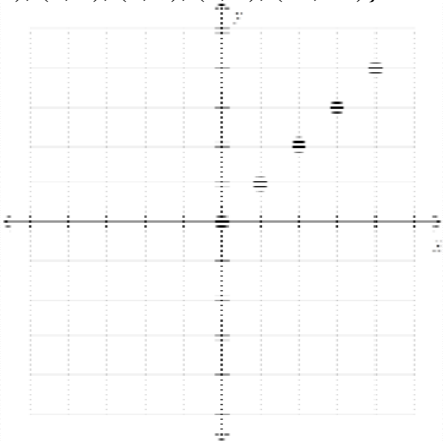


$D = \{2, 3\}; R = \{-5, 1, 3, 4\}$

Express each relation as a graph and a table. Then determine the domain and range.

29. $\{(1, 1), (3, 3), (4, 4), (0, 0), (-4, -4)\}$

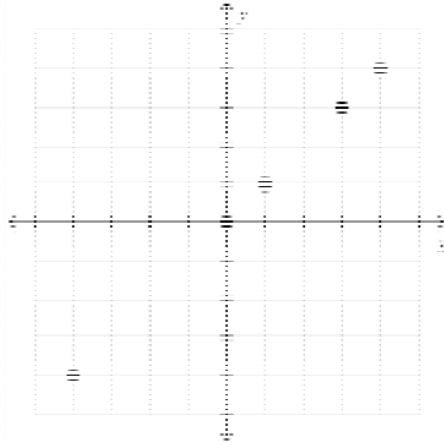
a.



x	y
1	1
3	3
4	4
0	0
-4	-4

$D = \{-4, 0, 1, 3, 4\}; R = \{-4, 0, 1, 3, 4\}$

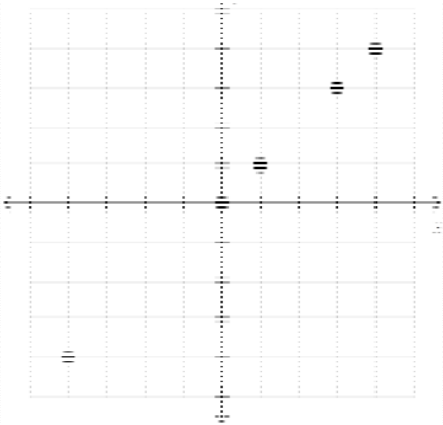
c.



x	y
1	1
-3	-3
4	4
0	0
-4	-4

$D = \{-4, 1, 0, 3, 4\}; R = \{-4, 1, 0, 3, 4\}$

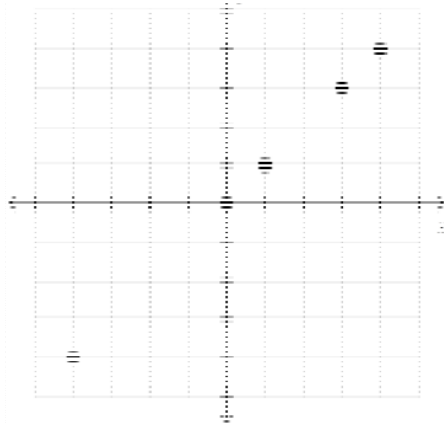
b.



x	y
1	1
3	3
4	4
0	0
-4	-4

$D = \{-4, 0, 1, 3, 4\}; R = \{-4, 0, 1, 3, 4\}$

d.



x	y
1	1
3	3
4	4
0	0
-4	-4

$D = \{1, 0, 3, 4\}; R = \{-4, 0, 1, 3, 4\}$

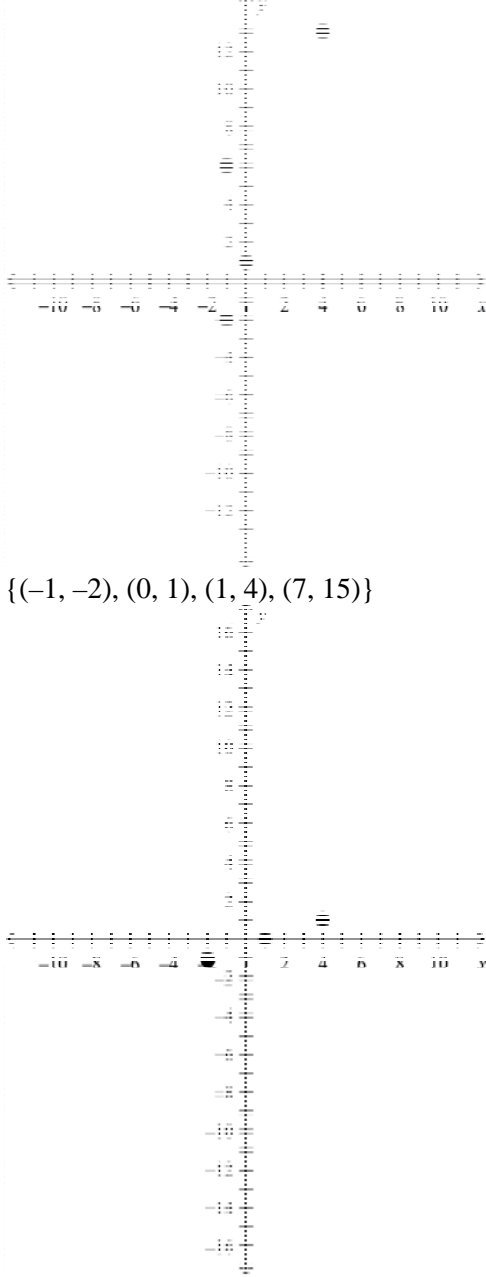
Find the solution set for the equation, given the replacement set.

30. $y = 7x + 6$; $\{(5, 41), (6, 44), (4, 39), (7, 42)\}$
- a. $\{(7, 42)\}$
 - b. $\{(4, 39)\}$
 - c. $\{(6, 44)\}$
 - d. $\{(5, 41)\}$

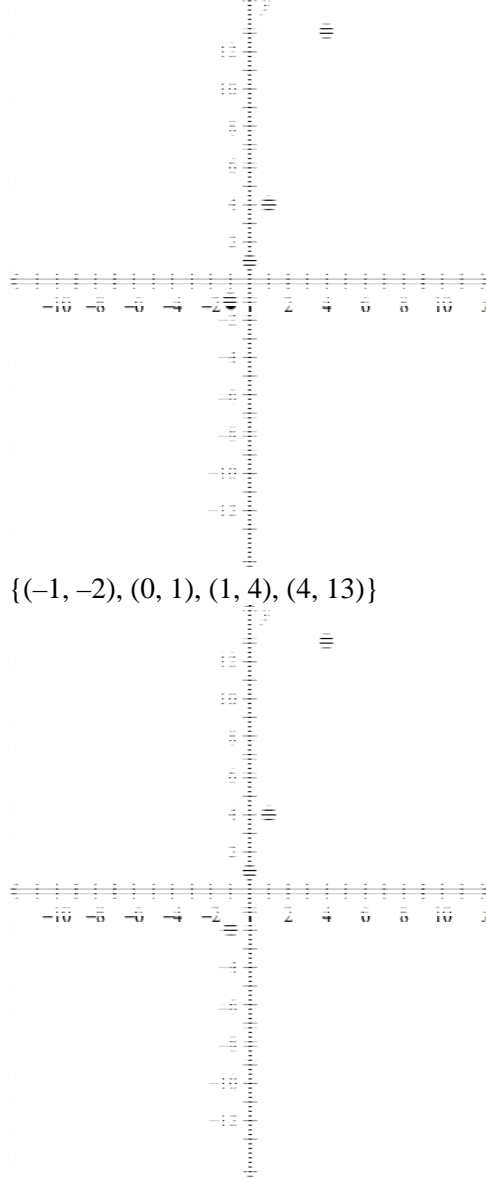
Solve the equation for the given domain. Graph the solution set.

31. $3x - y = -1$ for $x = \{-1, 0, 1, 4\}$

- a. $\{(-1, -2), (0, 1), (1, 4), (4, 13)\}$



- c. $\{(-1, -1), (0, 1), (1, 4), (4, 13)\}$



- b. $\{(-1, -2), (0, 1), (1, 4), (7, 15)\}$

- d. $\{(-1, -2), (0, 1), (1, 4), (4, 13)\}$

Find the next three terms of the arithmetic sequence.

32. $1\frac{4}{9}, 2\frac{1}{9}, 2\frac{7}{9}, 3\frac{4}{9}, \dots$

a. $4\frac{5}{9}, 5\frac{1}{3}, 6\frac{1}{9}$

c. $5, 5\frac{8}{9}, 6\frac{7}{9}$

b. $4\frac{1}{9}, 4\frac{7}{9}, 5\frac{4}{9}$

d. $3\frac{7}{9}, 4\frac{4}{9}, 5$

33. The table below shows the distance traveled by a person driving at the rate of 60 miles per hour.

Hours	1	2	3	4	5
Distance (miles)	60	120	180	240	300

Write an equation to describe the relationship.

a. $d = 60t$

c. $d = 60 + t$

b. $d = 60 \div t$

d. $d = 60 - t$

34. A board is leaning against a building so that the top of the board reaches a height of 18 feet. The bottom of the board is on the ground 4 feet away from the wall. What is the slope of the board as a positive number?

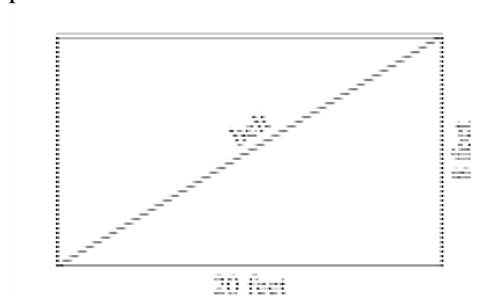
a. $\frac{2}{9}$

b. $\frac{9}{2}$

c. $-\frac{9}{2}$

d. undefined

35. A conveyor belt runs between floors of a building as pictured below. Find the slope of the belt as a positive number.

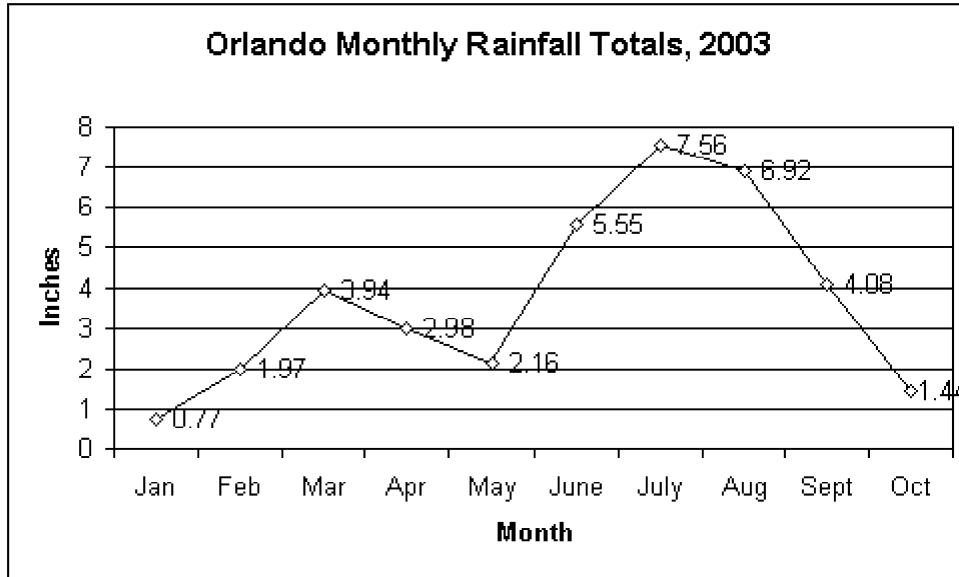


a. undefined

b. $\frac{5}{2}$

c. $\frac{2}{5}$

d. 0



Source: www.cityoforlando.net/public_works/stormwater/rain/rainfall.htm

36. For which one month period was the rate of change in rainfall amounts in Orlando the least?
- Jan. - Feb.
 - Aug. - Sept.
 - July - Aug.
 - Feb. - March

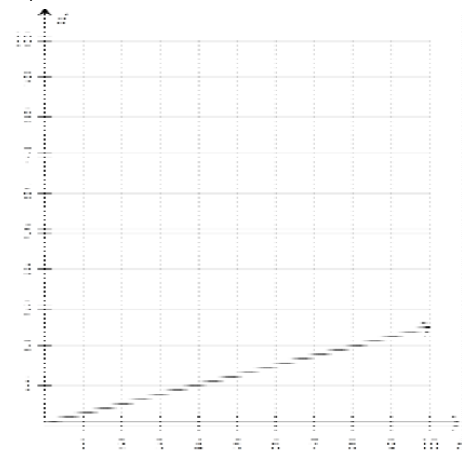
Write a direct variation equation that relates x and y . Assume that y varies directly as x . Then solve.

37. If $y = 5$ when $x = -10$, find y when $x = 1$.
- $y = -\frac{1}{2}x; -\frac{3}{5}$
 - $y = \frac{1}{2}x; \frac{1}{2}$
 - $y = -\frac{1}{2}x; -\frac{1}{2}$
 - $y = -\frac{7}{10}x; -\frac{7}{10}$

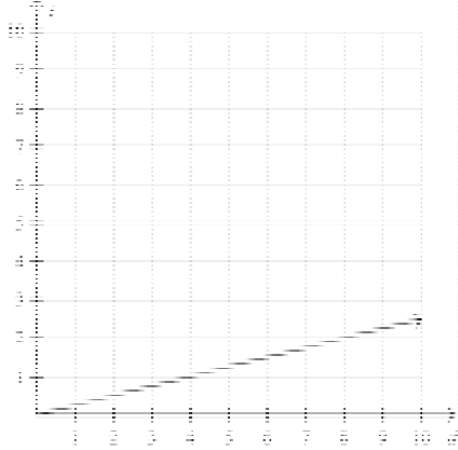
Write a direct variation equation that relates the variables. Then graph the equation.

38. Katie can walk at a rate of 4 miles per hour. Her total distance in t hours is d .

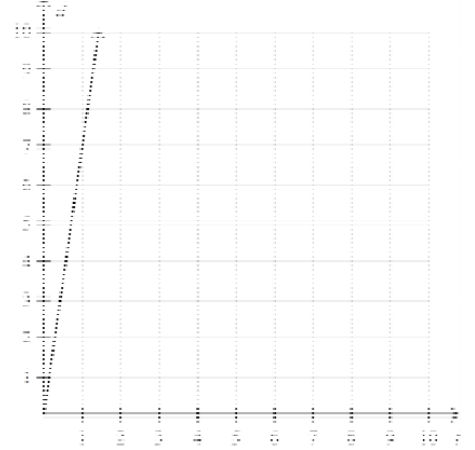
a. $d = \frac{1}{4}t$



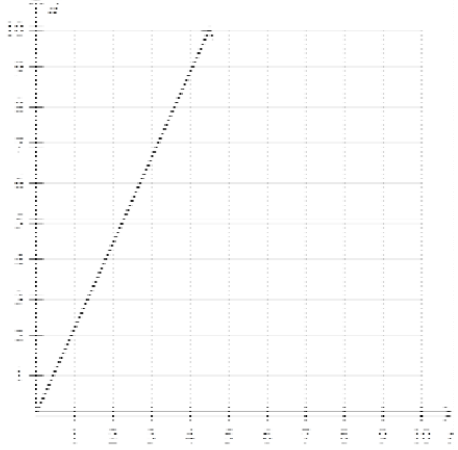
b. $d = 4t$



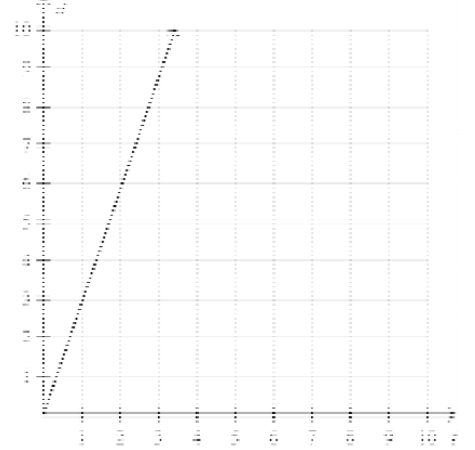
a. $t = 7d$



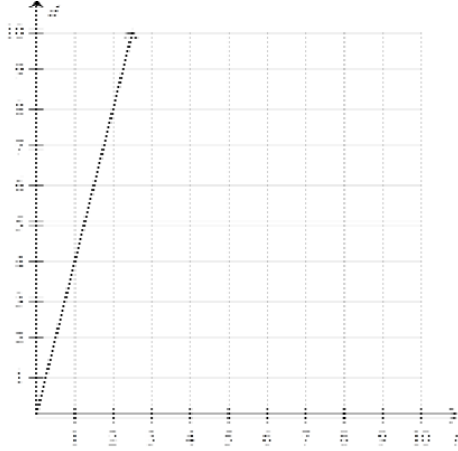
c. $d = 4t$



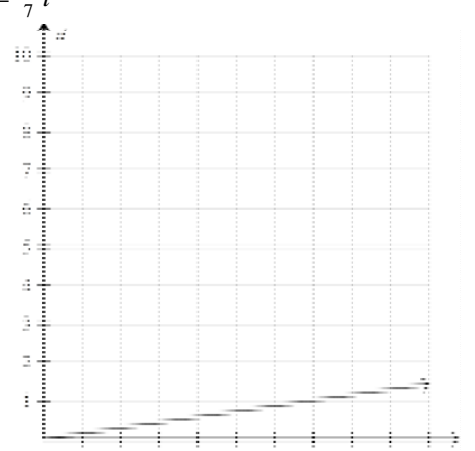
b. $d = 7t$



d. $d = 4t$

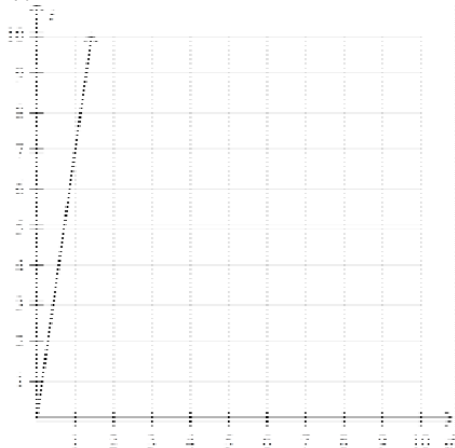


c. $d = \frac{1}{7}t$

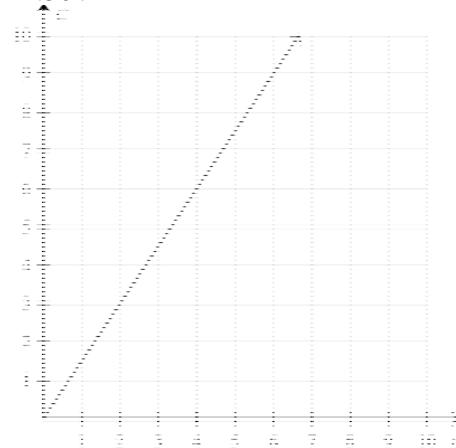


39. Alex can ride his bike at a rate of 7 miles per hour. His total distance in t hours is d .

d. $d = 7t$

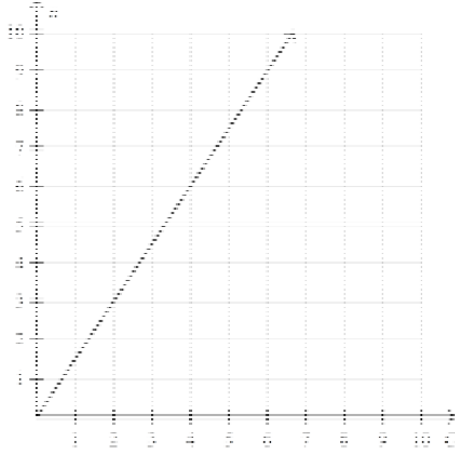


b. $C = 1.50n$

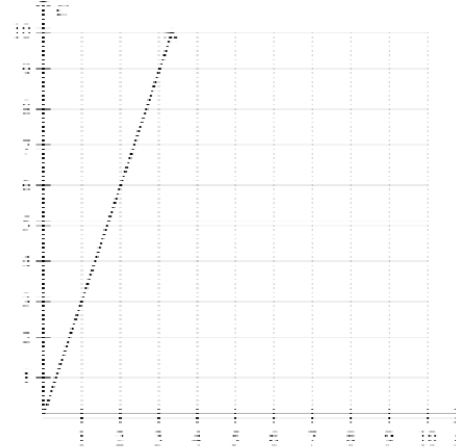


40. The total cost is C for n packages of popcorn priced at \$1.50 per package.

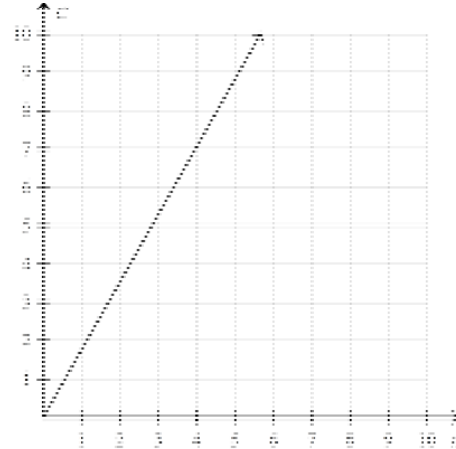
a. $n = 1.50C$



c. $C = 1.50n$



d. $C = 1.50n$



Name: _____

ID: A

Write an equation of the line with the given slope and y-intercept

41. slope: $\frac{2}{7}$, y-intercept: -3

a. $y = -\frac{2}{7}x - 3$

c. $y = \frac{2}{7}x + 3$

b. $y = \frac{7}{2}x - 3$

d. $y = \frac{2}{7}x - 3$

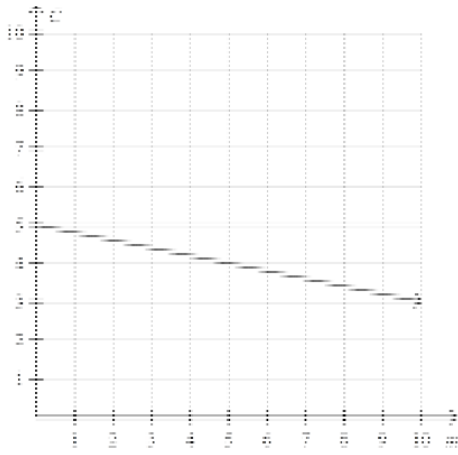
Name: _____

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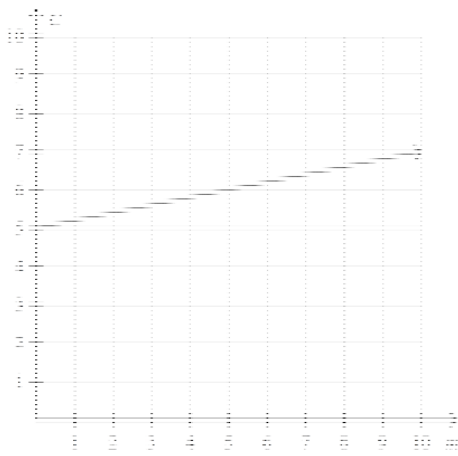
Beach Bike Rentals charges \$5.00 plus \$0.20 per mile to rent a bicycle.

42. Graph the equation needed to represent the cost at Beach Bike Rentals.

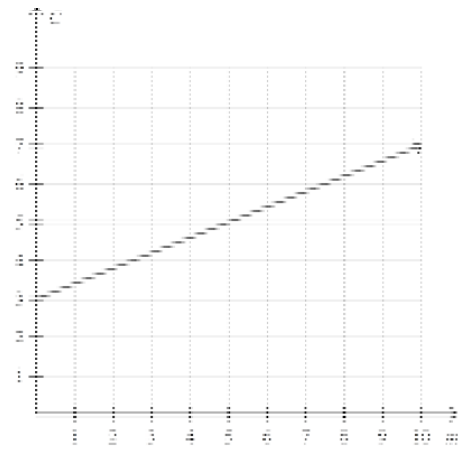
a.



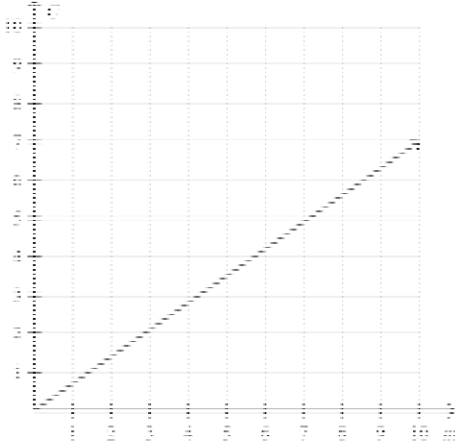
b.



c.



d.



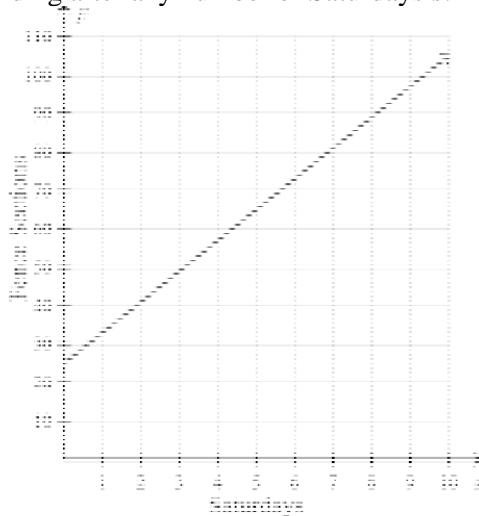
Mr. Collins is constructing a fence around his property. He already has 25 sections up and plans to add 8 sections each Saturday until he is finished.

43. Write an equation to find the total number of fence sections F standing after any number of Saturdays s .

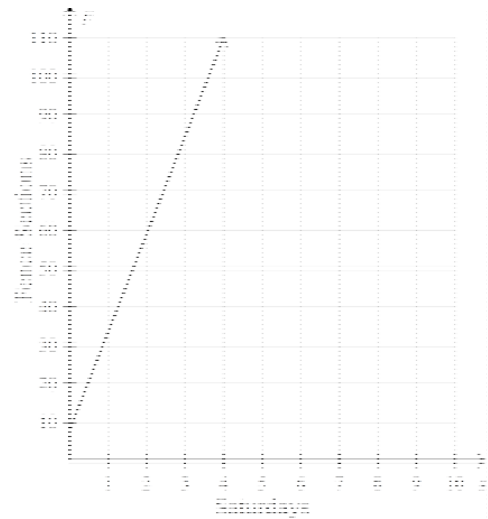
- a. $F = 25 + 8s$
- b. $F = 8 + 25s$
- c. $F = 25 - 8s$
- d. $s = 25 + 8F$

44. Graph the equation for the number of fence sections F standing after any number of Saturdays s .

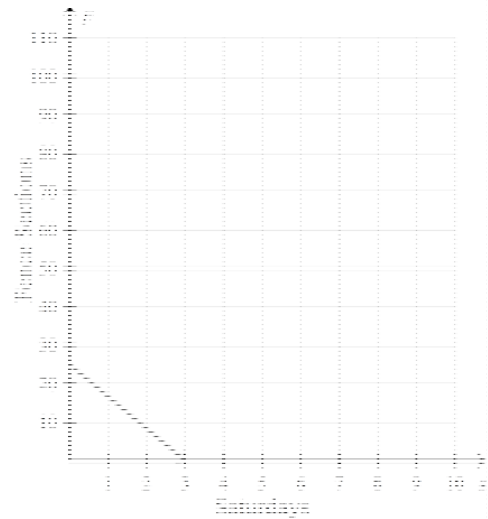
a.



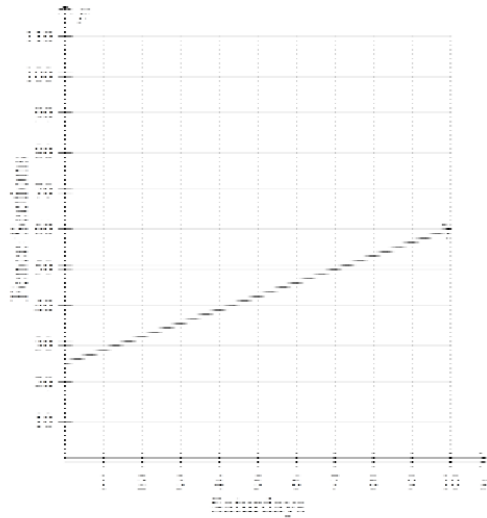
b.



c.



d.



Write an equation of the line that passes through each point with the given slope.

45. $(-3, -4), m = 3$

a. $y = 3x + 13$

b. $y = 3x - 5$

c. $y = -3x + 5$

d. $y = 3x + 5$

Write the point-slope form of an equation for a line that passes through the point with the given slope.

46. $(-4, 3), m = 1$

a. $y - 3 = 1(x + 4)$

b. $y + 3 = 1(x + 4)$

c. $y - 3 = 1(x - 4)$

d. $y - 3 = -(x + 4)$

47. $(-6, -6), m = -\frac{4}{7}$

a. $y - 6 = -\frac{4}{7}(x + 6)$

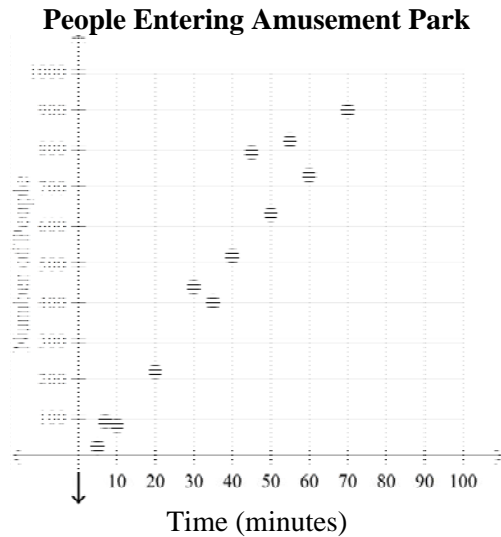
b. $y + 6 = -\frac{4}{7}(x - 6)$

c. $y + 6 = \frac{4}{7}(x + 6)$

d. $y + 6 = -\frac{4}{7}(x + 6)$

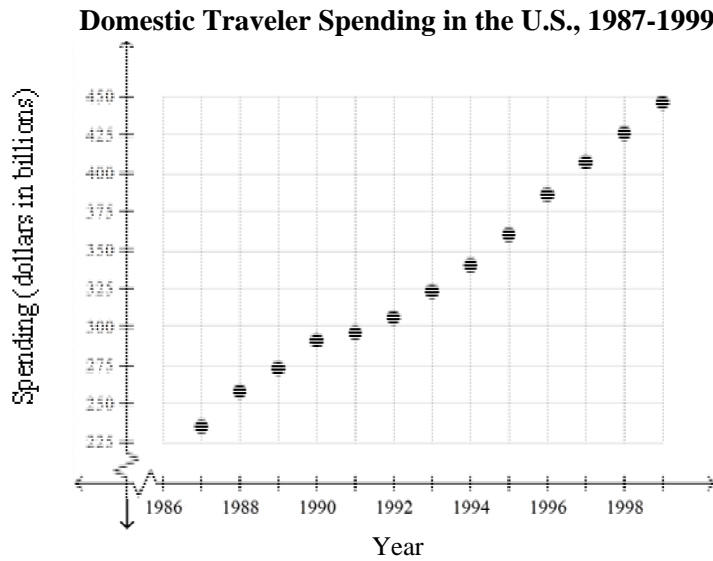
Determine whether the graph shows a positive correlation, a negative correlation, or no correlation. If there is a positive or negative correlation, describe its meaning in the situation.

48.



- a. positive; as time passes, the number of people entering decreases.
- b. negative; as time passes, the number of people entering decreases.
- c. no correlation
- d. positive; as time passes, the number of people entering increases.

49.

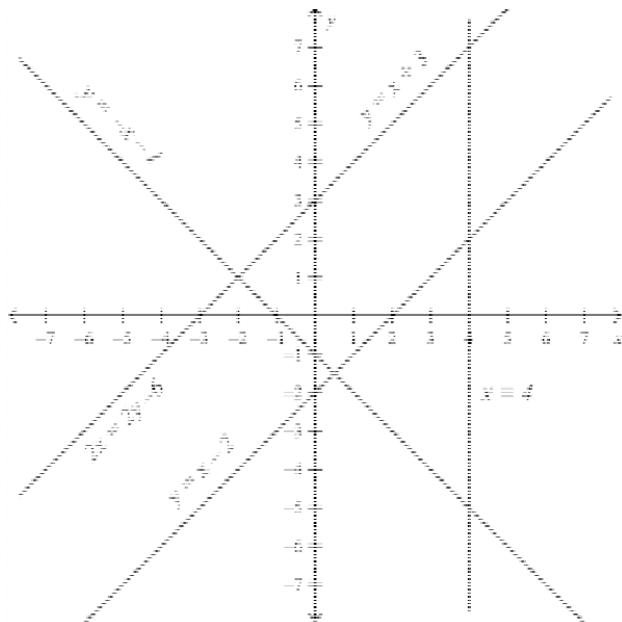


- a. positive correlation; as time passes, spending increases.
- b. no correlation
- c. positive correlation; as time passes, spending decreases.
- d. negative correlation; as time passes, spending decreases.

Name: _____

ID: A

Use the graph below to determine the number of solutions the system has.



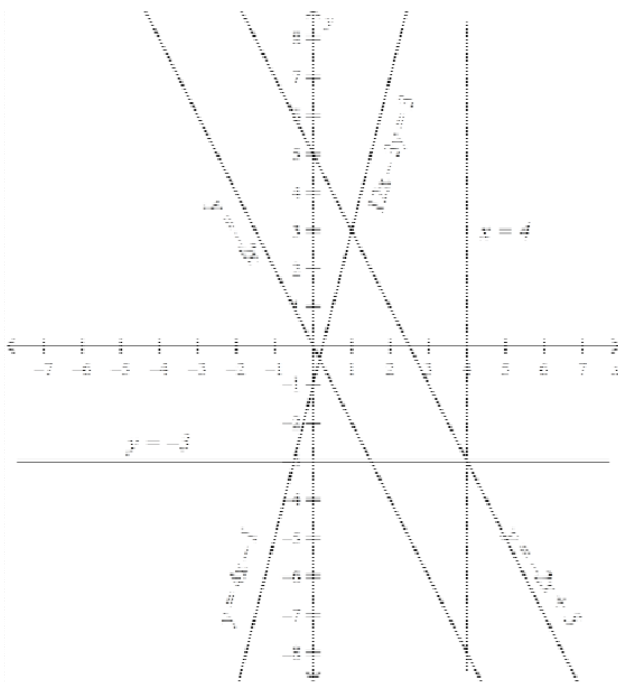
54. $2x = 2y - 6$

$y = x + 3$

- a. no solution
- b. one

- c. two
- d. infinitely many

Use the graph below to determine the number of solutions the system has.



55. $12x - 3y = 3$
 $y = 4x - 1$
- | | |
|--------------------|----------------|
| a. infinitely many | c. one |
| b. two | d. no solution |

Use substitution to solve the system of equations.

56. $-9 = x - 3y$
 $-2x + 6 = 6y$
- | | |
|------------------------------|--|
| a. (3, 4) | 58. Reid and Maria both play soccer. This season, Reid scored 4 less than twice the number of goals that Maria scored. The difference in the number of goals they scored was 6. How many goals did each of them score? |
| b. infinitely many solutions | a. Reid scored 8 and Maria scored 2. |
| c. (-9, 0) | b. Reid scored 2 and Maria scored 8. |
| d. (-3, 2) | c. Reid scored 16 and Maria scored 10. |
57. Angle A and angle B are complementary, that is their measurements add up to 90° . Angle B measures 32° more than angle A. What are the measurements of the two angles?
- | | |
|-------------------------------|--|
| a. 74° and 106° | d. Reid scored 10 and Maria scored 16. |
| b. 32° and 58° | |
| c. 29° and 61° | |
| d. 21° and 69° | |

59. Mrs. Davis went to a produce market to buy bananas and strawberries. She spent \$8.00. If the bananas were \$0.50 per pound, and the strawberries were 4 times that much, how many pounds of bananas did she buy if she bought 7 pounds of fruit altogether?
- 16 pounds
 - 5 pounds
 - 4 pounds
 - 3 pounds

Use elimination to solve the system of equations.

60. $-8x + 8y = -8$
 $-8x + 4y = 8$
- $(-3, -4)$
 - $(3, 4)$
 - $(-1, 0)$
 - $(1, 0)$

61. $-4x - 6y = -6$
 $7x + 9y = -9$
- $(-18, 13)$
 - $(13, -18)$
 - $(0, -1)$
 - $(0, 1)$

Determine the best method to solve the system of equations. Then solve the system.

62. $2x - 5y = 8$
 $3x - 11y = -2$
- elimination using addition; $(-1, -2)$
 - elimination using multiplication; $(-8, -\frac{24}{5})$
 - elimination using multiplication; $(14, 4)$
 - elimination using subtraction; $(-1, 6)$

63. $\frac{1}{4}x + \frac{3}{4}y = 1$
 $2x + 6y = 8$
- substitution; $(4, 0)$
 - elimination using multiplication; no solution
 - substitution; $(-\frac{1}{4}, -\frac{3}{4})$
 - elimination using multiplication; infinitely many solutions

Solve the inequality.

64. $\frac{-3b}{8} > -3$
- $b > -24$
 - $b > -\frac{8}{3}$
 - $b > 8$
 - $b < 8$

66. $3h + 9 > 15$
- $h > -4$
 - $h > 2$
 - $h > 6$
 - $h < 2$

65. $9m \leq -72$
- $m \geq -8$
 - $m \leq -8$
 - $m \leq -81$
 - $m \leq -648$

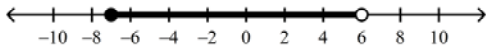
67. $\frac{2x - 10 + 3x}{4} < -5$
- $x < -2$
 - $x > -2$
 - $x < 6$
 - $x < 4$

68. $4.5s - 3.6 \leq 2.5s + 4.8$
- $s \leq 0.2$
 - $s \leq 42.0$
 - $s \leq 4.2$
 - $s \leq 6.4$

69. $5(2g - 3) - 6g \geq -2(g - 6) + 3$
- \mathbb{R} (all real numbers)
 - $g \geq 1$
 - $g \geq 5$
 - \emptyset (the empty set)

Solve the compound inequality and graph the solution set.

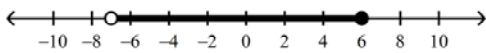
70. $u + 8 \geq 1$ and $u - 3 < 3$
- $-7 \leq u < 6$



- $0 \leq u < 9$



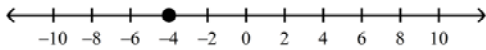
- $-7 \leq u < 6$



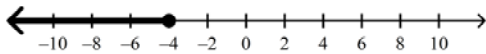
- $0 \leq u < 9$



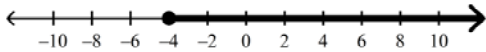
71. $0 + v \leq -4$ or $-2v \leq 8$
- $v = -4$



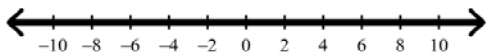
- $v \leq -4$



- $v \geq -4$



- \mathbb{R} (all real numbers)



72. In order to pass quality inspection, a container of strawberries must weigh within 1.4 grams of the listed weight of 453.6 grams. What is the range of acceptable weights for a container of strawberries?
- $\{w \mid 452.2 \leq w\}$
 - $\{w \mid w \leq 455.0\}$
 - $\{w \mid 452.2 \leq w \leq 455.0\}$
 - $\{w \mid w \leq 452.2 \text{ or } w \geq 455.0\}$

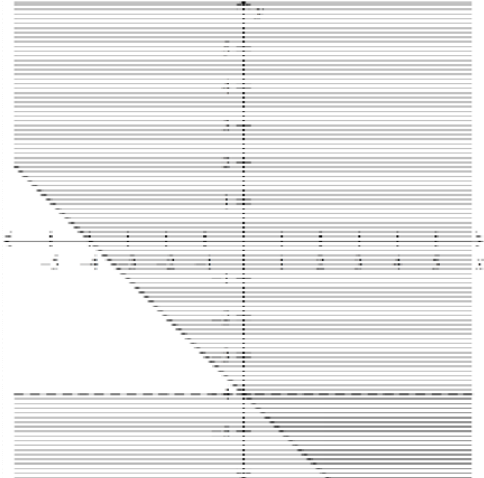
73. In order to earn a grade of C on the midterm, a student must have a score that is within 6 points of the average score of 62 points. Which score would earn a C?
- $\{x \mid 56 < x < 68\}$
 - $\{x \mid x < 56 \text{ or } x > 68\}$
 - $\{x \mid 56 \leq x \leq 68\}$
 - $\{x \mid x \leq 56 \text{ or } x \geq 68\}$

Solve the system of inequalities by graphing.

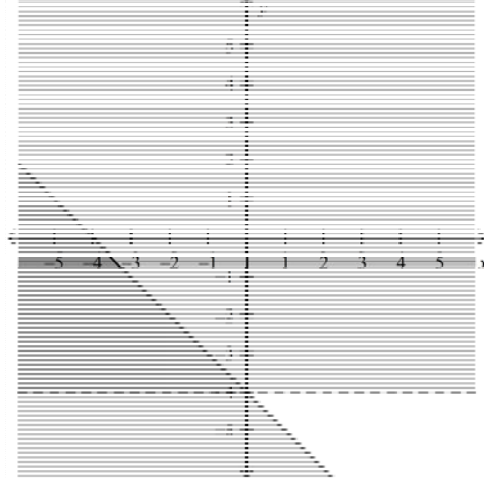
74. $y \geq -x - 4$

$y < -4$

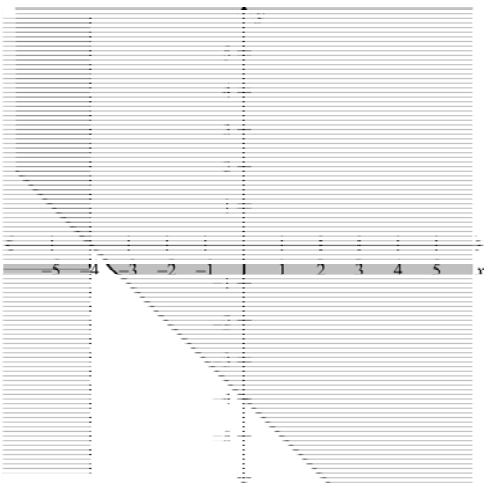
a.



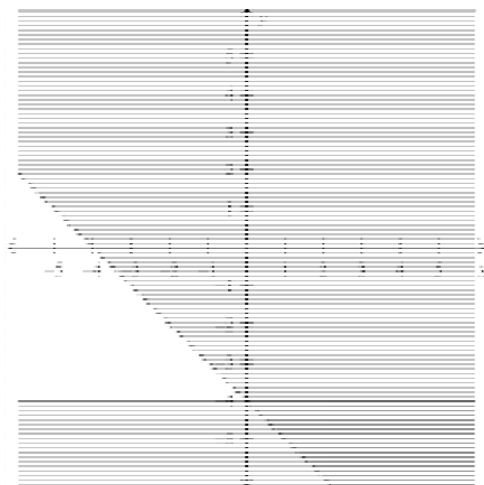
c.



b.



d.



Algebra 1 CP Semester 1 Review Answer Section

MULTIPLE CHOICE

1. ANS: D

Translate the verbal expression into an algebraic expression using key word clues to determine operations.

	Feedback
A	Is that the correct operation?
B	Is division indicated by the verbal expression?
C	Does the verbal expression involve a difference?
D	Correct!

PTS: 1

DIF: Basic

REF: Lesson 1-1

OBJ: 1-1.1 Write mathematical expressions for verbal expressions.

STA: 7AF1.1

TOP: Write mathematical expressions for verbal expressions

KEY: Write Expressions | Verbal Expressions

2. ANS: D

Translate the verbal expression into an algebraic expression using key word clues to determine operations.

	Feedback
A	Did you use key word clues to determine the operation?
B	Be careful deciding the correct operation.
C	Does the verbal expression indicate a quotient?
D	Correct!

PTS: 1

DIF: Average

REF: Lesson 1-1

OBJ: 1-1.1 Write mathematical expressions for verbal expressions.

STA: 7AF1.1

TOP: Write mathematical expressions for verbal expressions

KEY: Write Expressions | Verbal Expressions

3. ANS: A

Translate the algebraic expression into a verbal expression using key operation words.

	Feedback
A	Correct!
B	Is there subtraction in the expression?
C	Does the expression indicate multiplication?
D	Does the expression involve division?

PTS: 1

DIF: Basic

REF: Lesson 1-1

OBJ: 1-1.2 Write verbal expressions for mathematical expressions.

STA: 7AF1.1

TOP: Write verbal expressions for mathematical expressions

KEY: Write Expressions | Verbal Expressions

4. ANS: A

Perform any operations within grouping symbols first. Then evaluate powers followed by multiplication and division from left to right, then addition and subtraction from left to right.

	Feedback
A	Correct!
B	Did you do addition before multiplication?
C	Did you do addition before multiplication?
D	Be careful with the order of operations.

PTS: 1 DIF: Average REF: Lesson 1-2

OBJ: 1-2.1 Evaluate numerical expressions by using the order of operations.

STA: 7AF1.2 TOP: Evaluate numerical expressions by using the order of operations

KEY: Evaluate Expressions | Order of Operations

5. ANS: A

Two numbers whose product is 1 are called multiplicative inverses.

Since the product of any number and 1 is equal to the number, 1 is called the multiplicative identity.

	Feedback
A	Correct!
B	Is that the correct property?
C	Are you sure about the property?
D	Are you sure about the property?

PTS: 1 DIF: Average REF: Lesson 1-4

OBJ: 1-4.1 Recognize the properties of identity and equality. STA: 1.0 | 1.1 | 25.1

TOP: Recognize the properties of identity and equality KEY: Identity Property | Equality Property

6. ANS: C

Rewrite the product in the form $a(b + c)$, and use the Distributive Property to find the product.

	Feedback
A	Did you correctly rewrite using the Distributive Property?
B	Did you carefully rewrite the expression?
C	Correct!
D	Check your rewritten expression.

PTS: 1 DIF: Average REF: Lesson 1-5

OBJ: 1-5.1 Use the Distributive Property to evaluate expressions.

STA: 1.0 | 25.1 TOP: Use the Distributive Property to evaluate expressions

KEY: Distributive Property | Evaluate Expressions

7. ANS: B

An expression is in simplest form when it is replaced by an equivalent expression having no like terms or parentheses.

	Feedback
A	Are there no like terms or parentheses?
B	Correct!
C	Is there a variable in the second term?
D	Did you apply the Distributive Property correctly?

PTS: 1 DIF: Basic REF: Lesson 1-5

OBJ: 1-5.2 Use the Distributive Property to simplify algebraic expressions.

STA: 1.0 | 25.1 TOP: Use the Distributive Property to simplify expressions

KEY: Distributive Property | Simplify Expressions

8. ANS: D

An expression is in simplest form when it is replaced by an equivalent expression having no like terms or parentheses.

	Feedback
A	Did you add the last two terms?
B	Are there no like terms or parentheses?
C	Did you add unlike terms?
D	Correct!

PTS: 1 DIF: Average REF: Lesson 1-5

OBJ: 1-5.2 Use the Distributive Property to simplify algebraic expressions.

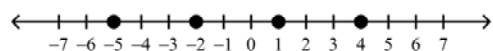
STA: 1.0 | 25.1 TOP: Use the Distributive Property to simplify expressions

KEY: Distributive Property | Simplify Expressions

9. ANS: A

Example:

The number line shown is a graph of $\{-5, -2, 1, 4\}$.



	Feedback
A	Correct!
B	Refer to the hint and try again.
C	You should match each given point to a point on the number line.
D	Check the plotted points and try again.

PTS: 1 DIF: Basic REF: Lesson 1-8 OBJ: 1-8.2 Graph real numbers.

STA: 1.0 | {Key}2.0

TOP: Graph real numbers

KEY: Real Numbers | Graphing

MSC: CAHSEE | Key

10. ANS: B

Use the table to find the relationship between the independent and dependent variables. Use this relationship to find the cost for one year.

	Feedback
A	How many months are in one year?
B	Correct!
C	How many months did you use?
D	Did you multiply correctly?

PTS: 1 DIF: Average REF: Lesson 1-9 OBJ: 1-9.2 Draw graphs of functions.

STA: {Key}6.0 | {Key}7.0 TOP: Draw graphs of functions

KEY: Graphs | Functions MSC: CAHSEE | Key

11. ANS: C

Translate verbal sentences into equations by using key words and phrases you have learned to replace words with symbols.

	Feedback
A	Does it say <i>less</i> or <i>less than</i> ?
B	Is <i>more than</i> translated as a product?
C	Correct!
D	Do you need grouping symbols?

PTS: 1 DIF: Average REF: Lesson 2-1

OBJ: 2-1.1 Translate verbal sentences into equations. STA: 7AF1.1

TOP: Translate verbal sentences into equations KEY: Verbal Sentences | Equations

12. ANS: A

Using key words for operations, translate the equation into a number sentence.

	Feedback
A	Correct!
B	What did you translate as the sum?
C	What is meant by the <i>quotient</i> ?
D	Are you sure about the left side of the equation?

PTS: 1 DIF: Average REF: Lesson 2-1

OBJ: 2-1.2 Translate equations into verbal sentences. STA: 7AF1.1

TOP: Translate equations into verbal sentences KEY: Equations | Verbal Sentences

13. ANS: D

Using key words for operations, translate the equation into a number sentence.

	Feedback
A	Is there addition in the equation?
B	Check the left side of the equation again.
C	What is meant by <i>increased by</i> ?
D	Correct!

PTS: 1 DIF: Basic REF: Lesson 2-1

OBJ: 2-1.2 Translate equations into verbal sentences.

STA: 7AF1.1

TOP: Translate equations into verbal sentences

KEY: Equations | Verbal Sentences

14. ANS: B

Using key words for operations, translate the equation into a number sentence.

	Feedback
A	What did you translate as the <i>difference</i> ?
B	Correct!
C	Are there three additions in the equation?
D	Are there two products in the equation?

PTS: 1 DIF: Basic REF: Lesson 2-1

OBJ: 2-1.2 Translate equations into verbal sentences.

STA: 7AF1.1

TOP: Translate equations into verbal sentences

KEY: Equations | Verbal Sentences

15. ANS: D

To solve an equation means to find all the values of the variable that make the equation a true statement. One way to do this is to isolate the variable on one side of the equation. You can sometimes do this by adding the same number to both sides of the equation.

	Feedback
A	Did you subtract a number from both sides?
B	Did you perform the addition correctly?
C	Be careful with sign rules.
D	Correct!

PTS: 1 DIF: Basic REF: Lesson 2-2

OBJ: 2-2.1 Solve equations with integers by using addition.

STA: {Key}5.0

TOP: Solve equations with integers by using addition

KEY: Solve Equations | Addition | Integers

MSC: CAHSEE | Key

16. ANS: A

If an equation is true and each side is multiplied by the same number, the resulting equation is true.

	Feedback
A	Correct!
B	Did you use the Multiplication Property of Equality?
C	How do you solve for the variable if it is divided by a number?
D	Did you multiply both sides by the same number?

PTS: 1 DIF: Basic REF: Lesson 2-3

OBJ: 2-3.3 Solve equations with fractions using multiplication and division.

STA: {Key}5.0 TOP: Solve equations with fractions by using multiplication and division

KEY: Solve Equations | Multiplication | Division | Fractions MSC: CAHSEE | Key

17. ANS: B

If an equation is true and each side is multiplied by the same number, the resulting equation is true.

	Feedback
A	Did you subtract?
B	Correct!
C	What did you multiply both sides by?
D	Did you cross multiply?

PTS: 1 DIF: Average REF: Lesson 2-3

OBJ: 2-3.3 Solve equations with fractions using multiplication and division.

STA: {Key}5.0 TOP: Solve equations with fractions by using multiplication and division

KEY: Solve Equations | Multiplication | Division | Fractions MSC: CAHSEE | Key

18. ANS: A

If an equation is true and each side is multiplied by the same number, the resulting equation is true. Rewrite each mixed number as an improper fraction and multiply each side by the reciprocal of the factor that is multiplied by the variable.

	Feedback
A	Correct!
B	Did you change to improper fractions and multiply by the reciprocal?
C	Be careful with sign rules.
D	Did you multiply by the reciprocal?

PTS: 1 DIF: Average REF: Lesson 2-3

OBJ: 2-3.4 Solve equations with mixed numbers using multiplication and division.

STA: {Key}5.0 TOP: Solve equations with mixed numbers by using multiplication and division

KEY: Solve Equations | Multiplication | Division | Mixed Numbers

MSC: CAHSEE | Key

19. ANS: C

First translate the verbal sentences into equations by using key words and phrases you have learned to replace words with symbols. Then to solve an equation with more than one operation, undo operations by working backward.

	Feedback
A	Carefully read the sentence again.
B	Did you isolate the variable?
C	Correct!
D	Is subtraction indicated by the sentence?

PTS: 1 DIF: Basic REF: Lesson 2-4

OBJ: 2-4.2 Solve consecutive integer problems.

STA: {Key}4.0 | {Key}5.0

TOP: Solve consecutive integer problems.

KEY: Solve equations | Integers

MSC: CAHSEE | Key

20. ANS: C

Use the Addition and/or Subtraction Properties of Equality to get the variables on one side of the equals sign and the numbers without variables on the other side of the equals sign. Simplify the expressions on each side of the equals sign. Use the Multiplication or Division Property of Equality to solve.

	Feedback
A	Did you divide both sides by the same number?
B	Did you add or subtract the same number from both sides correctly?
C	Correct!
D	Be careful with sign rules.

PTS: 1 DIF: Average REF: Lesson 2-5

OBJ: 2-5.3 Solve equations with decimals with the variable on each side.

STA: {Key}4.0 | {Key}5.0

TOP: Solve equations with decimals with the variable on each side

KEY: Solve Equations | Variables | Decimals

MSC: CAHSEE | Key

21. ANS: A

Use the Addition and/or Subtraction Properties of Equality to get the variables on one side of the equals sign and the numbers without variables on the other side of the equals sign. Simplify the expressions on each side of the equals sign. Use the Multiplication or Division Property of Equality to solve.

	Feedback
A	Correct!
B	Did you divide both sides by the same number?
C	Be careful with sign rules.
D	Did you add or subtract the same number from both sides correctly?

PTS: 1 DIF: Average REF: Lesson 2-5

OBJ: 2-5.4 Solve equations with integers involving grouping symbols.

STA: {Key}4.0 | {Key}5.0

TOP: Solve equations with integers involving grouping symbols

KEY: Solve Equations | Grouping Symbols | Integers

MSC: CAHSEE | Key

22. ANS: D

Use the Distributive Property to remove the grouping symbols. Simplify the expressions on each side of the equals sign. Use the Addition and/or Subtraction Properties of Equality to get the variables on one side of the equals sign and the numbers without variables on the other side of the equals sign. Simplify the expressions on each side of the equals sign. Use the Multiplication or Division Property of Equality to solve.

	Feedback
A	Did you use the Addition or Subtraction Property of Equality correctly?
B	Be careful with sign rules.
C	Be careful with the Division Property of Equality.
D	Correct!

PTS: 1 DIF: Average REF: Lesson 2-5

OBJ: 2-5.5 Solve equations with fractions involving grouping symbols.

STA: {Key}4.0 | {Key}5.0

TOP: Solve equations with fractions involving grouping symbols

KEY: Solve Equations | Grouping Symbols | Fractions

MSC: CAHSEE | Key

23. ANS: B

Solve the formula for a right circular cone for h . Then substitute the given values and solve.

	Feedback
A	Did you round your answer to the nearest hundredth?
B	Correct!
C	Is height measured in cubic units?
D	What is the formula for the height of a right circular cone?

PTS: 1 DIF: Average REF: Lesson 2-8

OBJ: 2-8.2 Use formulas to solve real-world problems.

STA: {Key}5.0

TOP: Use formulas to solve real-world problems

KEY: Formulas | Real-World Problems

MSC: CAHSEE | Key

24. ANS: B

Solve the formula for the specified variable using the properties of equality. Then substitute the given values.

	Feedback
A	Be careful with sign rules.
B	Correct!
C	Did you substitute correctly?
D	Did you substitute the correct values?

PTS: 1 DIF: Average REF: Lesson 2-8

OBJ: 2-8.2 Use formulas to solve real-world problems.

STA: {Key}5.0

TOP: Use formulas to solve real-world problems

KEY: Formulas | Real-World Problems

MSC: CAHSEE | Key

25. ANS: D

Solve the formula for the specified variable using the properties of equality.

	Feedback
A	Did you divide both sides of the equation by the same number?
B	Should you have added to both sides?
C	Did you do the division property correctly?
D	Correct!

PTS: 1 DIF: Basic REF: Lesson 2-8

OBJ: 2-8.2 Use formulas to solve real-world problems.

STA: {Key}5.0

TOP: Use formulas to solve real-world problems

KEY: Formulas | Real-World Problems

MSC: CAHSEE | Key

26. ANS: A

Solve the formula for the specified variable using the properties of equality. Then substitute the given values.

	Feedback
A	Correct!
B	Did you multiply?
C	Be careful with division.
D	Did you divide correctly?

PTS: 1 DIF: Basic REF: Lesson 2-8

OBJ: 2-8.2 Use formulas to solve real-world problems.

STA: {Key}5.0

TOP: Use formulas to solve real-world problems

KEY: Formulas | Real-World Problems

MSC: CAHSEE | Key

27. ANS: A

Uniform motion problems are problems where an object moves at a certain speed, or rate. Use the formula $d = rt$ to solve these problems, where d is the distance, r is the rate, and t is the time. Complete the table using the given information. The sum of the distances the two planes travel is equal to the total distance.

	Feedback
A	Correct!
B	Does the left side of the equation equal the total distance traveled?
C	Does the right side of the equation equal the total distance traveled?
D	Did both planes travel the same length of time?

PTS: 1 DIF: Average REF: Lesson 2-9 OBJ: 2-9.1 Solve uniform motion problems.

STA: {Key}5.0 TOP: Solve uniform motion problems

KEY: Uniform Motion | Solve Problems

MSC: CAHSEE | Key

28. ANS: A

A relation is a set of ordered pairs. A relation can also be represented by a table, a graph, or a mapping.

	Feedback
A	Correct!
B	Are you sure about the mapping?
C	Did you plot the points correctly?
D	Check the mapping again.

PTS: 1 DIF: Average REF: Lesson 3-1

OBJ: 3-1.1 Represent relations of sets of ordered pairs, tables, mappings, and graphs.

STA: {Key}6.0 | {Key}7.0

TOP: Represent relations as sets of ordered pairs, tables, mappings, and graphs

KEY: Relations | Ordered Pairs | Tables | Mappings | Graphs MSC: CAHSEE | Key

29. ANS: B

A relation is a set of ordered pairs. A relation can also be represented by a table, a graph, or a mapping.

	Feedback
A	Did you plot all the points correctly?
B	Correct!
C	Check your table again.
D	Are you sure about the domain and range?

PTS: 1 DIF: Average REF: Lesson 3-1

OBJ: 3-1.1 Represent relations of sets of ordered pairs, tables, mappings, and graphs.

STA: {Key}6.0 | {Key}7.0

TOP: Represent relations as sets of ordered pairs, tables, mappings, and graphs

KEY: Relations | Ordered Pairs | Tables | Mappings | Graphs MSC: CAHSEE | Key

30. ANS: D

A solution of an equation in two variables is an ordered pair that results in a true statement when substituted into the equation.

	Feedback
A	Is the equation true?
B	Does substituting for x and y result in a true equation?
C	Does the ordered pair make the equation true?
D	Correct!

PTS: 1 DIF: Average REF: Lesson 3-3

OBJ: 3-3.1 Identify linear equations, intercepts, and zeros. STA: {Key}6.0 | {Key}7.0

TOP: Use an equation to determine the range for a given domain

KEY: Domain | Range MSC: CAHSEE | Key

31. ANS: D

A solution of an equation in two variables is an ordered pair that results in a true statement when substituted into the equation. You can graph the ordered pairs in the solution set for an equation in two variables.

	Feedback
A	Did you plot all points correctly?
B	Are all the ordered pairs correct?
C	Are all the ordered pairs correct?
D	Correct!

PTS: 1 DIF: Average REF: Lesson 3-3 OBJ: 3-3.2 Graph linear equations.

STA: {Key}6.0 | {Key}7.0

TOP: Graph the solution set for a given domain

KEY: Domain | Graph Solutions

MSC: CAHSEE | Key

32. ANS: B

Each term of an arithmetic sequence after the first term can be found by adding the common difference to the preceding term.

	Feedback
A	Is the fifth term the result of adding the common difference to the fourth term?
B	Correct!
C	What is the common difference?
D	What is the common difference?

PTS: 1 DIF: Average REF: Lesson 3-4

OBJ: 3-4.2 Extend and write formulas for arithmetic sequences.

STA: {Key}7AF3.4

TOP: Extend and write formulas for arithmetic sequences

KEY: Sequences | Arithmetic Sequences MSC: Key

33. ANS: A

Find the difference of the values for t and d . Use the relationship between them to write an equation.

	Feedback
A	Correct!
B	Check the operator.
C	Check your answer.
D	Look at the hint and try again!

PTS: 1 DIF: Basic REF: Lesson 3-5

OBJ: 3-5.1 Write an equation for a proportional or nonproportional relationship.

STA: {Key}6.0

TOP: Write an equation for a proportional or nonproportional relationship.

KEY: Equations | Analyzing Data

MSC: CAHSEE | Key

34. ANS: B

The slope m of a nonvertical line through any two points, is the ratio of the difference of the y -coordinates to the difference of the x -coordinates. A vertical line has an undefined slope.

	Feedback
A	Is that the rise over the run?
B	Correct!
C	Is that a positive number?
D	Is the board vertical?

PTS: 1 DIF: Basic REF: Lesson 4-1

OBJ: 4-1.1 Use rate of change to solve problems.

STA: {Key}7AF3.3

TOP: Use rate of change to solve problems

KEY: Rate of Change | Solve Problems

MSC: Key

35. ANS: C

The slope m of a nonvertical line through any two points is the ratio of the difference of the y -coordinates to the difference of the x -coordinates. A vertical line has an undefined slope.

	Feedback
A	Is the belt vertical?
B	Is that the run over the rise?
C	Correct!
D	Is the belt horizontal?

PTS: 1 DIF: Basic REF: Lesson 4-1

OBJ: 4-1.1 Use rate of change to solve problems.

STA: {Key}7AF3.3

TOP: Use rate of change to solve problems

KEY: Rate of Change | Solve Problems

MSC: Key

36. ANS: C

Slope can be used to describe a rate of change. The rate of change tells, on average, how a quantity is changing over time.

	Feedback
A	Is that the smallest rate of change?
B	What is the difference in rainfall amounts for that period?
C	Correct!
D	What is the rate of change for that period?

PTS: 1 DIF: Average REF: Lesson 4-1

OBJ: 4-1.1 Use rate of change to solve problems.

STA: {Key}7AF3.3

TOP: Use rate of change to solve problems

KEY: Rate of Change | Solve Problems

MSC: Key

37. ANS: C

A direct variation is described by an equation of the form $y = kx$, where $k \neq 0$. We say that y varies directly with x or y varies directly as x . In the equation $y = kx$, k is the constant of variation.

	Feedback
A	Are you sure about the solution to the equation?
B	Be careful with sign rules.
C	Correct!
D	Does that equation work for the given values?

PTS: 1 DIF: Average REF: Lesson 4-2

OBJ: 4-2.1 Write and graph direct variation equations.

STA: {Key}7AF4.2

TOP: Write and graph direct variation equations

KEY: Direct Variation | Graphs | Equations

MSC: Key

38. ANS: D

Direct variation equations are of the form $y = kx$, where $k \neq 0$. The graph of $y = kx$ always passes through the origin.

	Feedback
A	What is Katie's rate of speed?
B	Which variable is the independent variable?
C	Do points on the graph make the equation true?
D	Correct!

PTS: 1 DIF: Average REF: Lesson 4-2

OBJ: 4-2.2 Solve problems involving direct variation.

STA: {Key}7AF4.2

TOP: Solve problems involving direct variation

KEY: Direct Variation | Solve Problems

MSC: Key

39. ANS: D

Direct variation equations are of the form $y = kx$, where $k \neq 0$. The graph of $y = kx$ always passes through the origin.

	Feedback
A	Which variable is the independent variable?
B	Do points on the graph make the equation true?
C	What was Alex's rate of speed?
D	Correct!

PTS: 1 DIF: Average REF: Lesson 4-2

OBJ: 4-2.2 Solve problems involving direct variation.

STA: {Key}7AF4.2

TOP: Solve problems involving direct variation

KEY: Direct Variation | Solve Problems

MSC: Key

40. ANS: B

Direct variation equations are of the form $y = kx$, where $k \neq 0$. The graph of $y = kx$ always passes through the origin.

	Feedback
A	Which variable is the independent variable?
B	Correct!
C	Do the equation and graph match?
D	Do points on the graph make the equation true?

PTS: 1 DIF: Average REF: Lesson 4-2

OBJ: 4-2.2 Solve problems involving direct variation.

STA: {Key}7AF4.2

TOP: Solve problems involving direct variation

KEY: Direct Variation | Solve Problems

MSC: Key

41. ANS: D

The linear equation $y = mx + b$ is written in slope-intercept form, where m is the slope and b is the y -intercept.

	Feedback
A	What is the slope of the line?
B	What is the slope?
C	What is the y -intercept?
D	Correct!

PTS: 1 DIF: Basic REF: Lesson 4-3

OBJ: 4-3.1 Write and graph linear equations in slope-intercept form.

STA: {Key}6.0 TOP: Write and graph linear equations in slope-intercept form

KEY: Slope-Intercept Form | Linear Equations | Graphs

MSC: CAHSEE | Key

42. ANS: B

If a quantity changes at a constant rate over time, it can be modeled by a linear equation. The y -intercept represents a starting point, and the slope represents the rate of change.

	Feedback
A	Is the rate of change positive or negative?
B	Correct!
C	What is the y -intercept?
D	What is the base rental cost?

PTS: 1 DIF: Average REF: Lesson 4-3

OBJ: 4-3.2 Model real-world data with an equation in slope-intercept form.

STA: {Key}6.0 TOP: Model real-world data with an equation in slope-intercept form

KEY: Slope-Intercept Form | Equations | Real-World Problems MSC: CAHSEE | Key

43. ANS: A

If a quantity changes at a constant rate over time, it can be modeled by a linear equation. The y -intercept represents a starting point, and the slope represents the rate of change.

	Feedback
A	Correct!
B	How many sections are already up?
C	Does the number of sections standing decrease each Saturday?
D	Which variable is the independent variable?

PTS: 1 DIF: Basic REF: Lesson 4-3

OBJ: 4-3.2 Model real-world data with an equation in slope-intercept form.

STA: {Key}6.0 TOP: Model real-world data with an equation in slope-intercept form

KEY: Slope-Intercept Form | Equations | Real-World Problems MSC: CAHSEE | Key

44. ANS: A

If a quantity changes at a constant rate over time, it can be modeled by a linear equation. The y -intercept represents a starting point, and the slope represents the rate of change.

	Feedback
A	Correct!
B	What is the y -intercept?
C	Does the number of sections standing decrease each Saturday?
D	What is the slope of the line?

PTS: 1 DIF: Average REF: Lesson 4-3

OBJ: 4-3.2 Model real-world data with an equation in slope-intercept form.

STA: {Key}6.0 TOP: Model real-world data with an equation in slope-intercept form

KEY: Slope-Intercept Form | Equations | Real-World Problems MSC: CAHSEE | Key

45. ANS: D

Find the y -intercept by replacing x and y with the given point and m with the given slope in the slope-intercept form. Solve for b . Write the equation in slope-intercept form using the given m and the calculated b .

	Feedback
A	What is the y -intercept?
B	What is the y -intercept?
C	What is the slope of the line?
D	Correct!

PTS: 1 DIF: Average REF: Lesson 4-4

OBJ: 4-4.1 Write an equation of a line given the slope and one point on the line.

STA: 7AF1.1 TOP: Write an equation of a line given the slope and one point on a line

KEY: Slope | Equations | Lines

46. ANS: A

The linear equation $y - y_1 = m(x - x_1)$ is written in point-slope form, where (x_1, y_1) is a given point on a nonvertical line and m is the slope of the line.

	Feedback
A	Correct!
B	What is the y -coordinate of the given point?
C	Did you subtract the x -coordinate from x ?
D	What is the slope of the line?

PTS: 1 DIF: Average REF: Lesson 4-5

OBJ: 4-5.1 Write the equation of a line in point-slope form.

STA: {Key}7.0

TOP: Write the equation of a line in point-slope form

KEY: Point-Slope Form | Equations | Lines

MSC: CAHSEE | Key

47. ANS: D

The linear equation $y - y_1 = m(x - x_1)$ is written in point-slope form, where (x_1, y_1) is a given point on a nonvertical line and m is the slope of the line.

	Feedback
A	What is the y -coordinate of the given point?
B	Did you subtract the x -coordinate from x ?
C	What is the slope of the line?
D	Correct!

PTS: 1 DIF: Average REF: Lesson 4-5

OBJ: 4-5.1 Write the equation of a line in point-slope form.

STA: {Key}7.0

TOP: Write the equation of a line in point-slope form

KEY: Point-Slope Form | Equations | Lines

MSC: CAHSEE | Key

48. ANS: D

A scatter plot is a graph in which two sets of data are plotted as ordered pairs in a coordinate plane. There is a positive correlation when as x increases, y increases. There is a negative correlation when as x increases, y decreases. There is no correlation when x and y are not related.

	Feedback
A	What is meant by positive correlation?
B	Does the number of people decrease as time passes?
C	Are the variables related?
D	Correct!

PTS: 1

DIF: Average REF: Lesson 4-6

OBJ: 4-6.1 Interpret points on a scatter plot.

STA: 8.0

TOP: Interpret points on a scatter plot

KEY: Scatter Plot | Interpret Data

MSC: CAHSEE

49. ANS: A

A scatter plot is a graph in which two sets of data are plotted as ordered pairs in a coordinate plane. There is a positive correlation when as x increases, y increases. There is a negative correlation when as x increases, y decreases. There is no correlation when x and y are not related.

	Feedback
A	Correct!
B	Are the variables not related?
C	What is meant by positive correlation?
D	Is spending decreasing with time?

PTS: 1 DIF: Average REF: Lesson 4-6 OBJ: 4-6.1 Interpret points on a scatter plot.
 STA: 8.0 TOP: Interpret points on a scatter plot KEY: Scatter Plot | Interpret Data
 MSC: CAHSEE

50. ANS: A

If the data points do not all lie on a line, but are close to a line, you can draw a line of fit. This line describes the trend of the data. Once you have a line of fit, you can find an equation of the line using 2 points to find the slope and y -intercept.

	Feedback
A	Correct!
B	Is there a negative correlation?
C	Did you add when you should have subtracted?
D	Which variable is the independent variable?

PTS: 1 DIF: Average REF: Lesson 4-6
 OBJ: 4-6.2 Use lines of fit to make and evaluate predictions. STA: 8.0
 TOP: Write equations for lines of fit KEY: Best Fit Line | Equations
 MSC: CAHSEE

51. ANS: C

Two nonvertical lines are parallel if they have the same slope. Use the given point with the slope of the parallel line in the point-slope form. Then change to the slope-intercept form.

	Feedback
A	What is the slope of the parallel line?
B	Did you add or subtract carefully? Should the slope be the same as the slope of the parallel line?
C	Correct!
D	Be careful with signs when adding to or subtracting from both sides of the equation.

PTS: 1 DIF: Average REF: Lesson 4-7
 OBJ: 4-7.1 Write an equation of the line that passes through a given point, parallel to a given line.
 STA: 8.0 TOP: Write an equation of the line that passes through a given point, parallel to a given line
 KEY: Lines | Equations | Parallel MSC: CAHSEE

52. ANS: B

Two nonvertical lines are perpendicular if the slopes are opposite reciprocals of each other. Use the given point with the slope of the perpendicular line in point-slope form. Then change to slope-intercept form.

Feedback	
A	Did you add or subtract carefully? Should the slope be the same as the slope of the perpendicular line?
B	Correct!
C	How are the slopes of perpendicular lines related?
D	What is the slope of the perpendicular line?

PTS: 1 DIF: Average REF: Lesson 4-7

OBJ: 4-7.2 Write an equation of the line that passes through a given point, perpendicular to a given line.

STA: 8.0

TOP: Write an equation of the line that passes through a given point, perpendicular to a given line

KEY: Lines | Equations | Perpendicular MSC: CAHSEE

53. ANS: B

Two nonvertical lines are perpendicular if the slopes are opposite reciprocals of each other. Use the given point with the slope of the perpendicular line in point-slope form. Then change to slope-intercept form.

Feedback	
A	Did you add or subtract carefully? Should the slope be the same as the slope of the perpendicular line?
B	Correct!
C	How are the slopes of perpendicular lines related?
D	What is the slope of the perpendicular line?

PTS: 1 DIF: Average REF: Lesson 4-7

OBJ: 4-7.2 Write an equation of the line that passes through a given point, perpendicular to a given line.

STA: 8.0

TOP: Write an equation of the line that passes through a given point, perpendicular to a given line

KEY: Lines | Equations | Perpendicular MSC: CAHSEE

54. ANS: D

Since the graphs coincide, there are infinitely many solutions.

Feedback	
A	No solution means that the lines are parallel.
B	One solution means that the lines intersect.
C	If the lines intersect, there is one solution. If they are parallel, there are no solutions. If they are the same line, there is an infinite number of solutions.
D	Correct!

PTS: 1 DIF: Basic REF: Lesson 5-1

OBJ: 5-1.1 Determine whether a system of equations has no, one, or infinitely many solutions.

STA: {Key}9.0 TOP: Determine whether a system of linear equations has 0, 1, or infinitely many solutions

KEY: System of Equations | Linear Equations MSC: CAHSEE | Key

55. ANS: A

Since the graphs coincide, there are infinitely many solutions.

	Feedback
A	Correct!
B	If the lines intersect, there is one solution. If they are parallel, there are no solutions. If they are the same line, there is an infinite number of solutions.
C	One solution means that the lines intersect.
D	No solution means that the lines are parallel.

PTS: 1 DIF: Basic REF: Lesson 5-1

OBJ: 5-1.1 Determine whether a system of equations has no, one, or infinitely many solutions.

STA: {Key}9.0 TOP: Determine whether a system of linear equations has 0, 1, or infinitely many solutions

KEY: System of Equations | Linear Equations

MSC: CAHSEE | Key

56. ANS: D

Solve the top equation for x . Substitute the result for x in the bottom equation. Solve for y . Substitute the value obtained for y into the top equation and solve for x .

	Feedback
A	Solve the top equation for x and substitute into the second equation for x .
B	There is only one solution to this system of equations.
C	Remember to add to solve the top equation for x .
D	Correct!

PTS: 1 DIF: Average REF: Lesson 5-2

OBJ: 5-2.1 Solve systems of equations by using substitution.

STA: {Key}9.0

TOP: Solve systems of equations by using substitution

KEY: System of Equations | Substitution

MSC: CAHSEE | Key

57. ANS: C

$$a + b = 90$$

$$b = a + 32$$

Substitute $a + 32$ for b in the first equation and solve for a . Substitute that value into the second equation and solve for b .

	Feedback
A	Angles A and B are complementary angles, not supplementary.
B	Be sure that your two original equations are set up correctly.
C	Correct!
D	Do these measurements satisfy both equations?

PTS: 1 DIF: Average REF: Lesson 5-2

OBJ: 5-2.2 Solve real-world problems involving systems of equations.

STA: {Key}9.0 TOP: Solve real-world problems involving systems of equations.

KEY: System of Equations | Real-World Problems

MSC: CAHSEE | Key

58. ANS: C

$$r = 2m - 4$$

$$r - m = 6$$

Substitute $2m - 4$ for r in the second equation and solve for m . Substitute that value into the first equation and solve for r .

	Feedback
A	Did you set up the equations correctly?
B	Do these values satisfy the equations?
C	Correct!
D	Who scored more goals?

PTS: 1 DIF: Average REF: Lesson 5-2

OBJ: 5-2.2 Solve real-world problems involving systems of equations.

STA: {Key}9.0 TOP: Solve real-world problems involving systems of equations.

KEY: System of Equations | Real-World Problems MSC: CAHSEE | Key

59. ANS: C

$$b + s = 7$$

$$0.50b + 2.00s = 8.00$$

Solve the first equation for one of the variables and substitute into the second equation. Solve. Substitute that value into the first equation to find the second value.

	Feedback
A	Did you set up the equations correctly?
B	Did you set up the equations correctly?
C	Correct!
D	This is the number of pounds of strawberries that she bought.

PTS: 1 DIF: Average REF: Lesson 5-2

OBJ: 5-2.2 Solve real-world problems involving systems of equations.

STA: {Key}9.0 TOP: Solve real-world problems involving systems of equations.

KEY: System of Equations | Real-World Problems MSC: CAHSEE | Key

60. ANS: A

Eliminate one variable by subtracting the two equations. Solve for y and then substitute that value into one of the equations to find the value of x .

	Feedback
A	Correct!
B	Double-check your positive and negative signs.
C	Subtract the equations instead of adding them.
D	Subtract the equations instead of adding them.

PTS: 1 DIF: Average REF: Lesson 5-3

OBJ: 5-3.2 Solve systems of equations by using elimination with subtraction.

STA: {Key}9.0 TOP: Solve systems of equations by using elimination with subtraction

KEY: System of Equations | Elimination | Subtraction MSC: CAHSEE | Key

61. ANS: A

Eliminate the y terms by first multiplying the top equation by 3 and the bottom one by 2 and then adding the two equations. Solve for x and then substitute that value into one of the equations to find the value of y .

	Feedback
A	Correct!
B	Remember to list the x -coordinate first in an ordered pair.
C	Multiply the top equation by a number and multiply the bottom equation by another number so that the y terms are eliminated when the equations are added.
D	Multiply the top equation by a number and multiply the bottom equation by another number so that the y terms are eliminated when the equations are added.

PTS: 1 DIF: Average REF: Lesson 5-4

OBJ: 5-4.1 Solve systems of equations by using elimination with multiplication.

STA: {Key}9.0 TOP: Solve systems of equations by using elimination with multiplication

KEY: System of Equations | Elimination | Multiplication MSC: CAHSEE | Key

62. ANS: C

Use elimination by multiplication.

Multiply the top equation by 3 and the bottom equation by -2 .

$$6x - 15y = 24$$

$$-6x + 22y = 4$$

Now add.

$$7y = 28$$

$$y = 4$$

Then

$$2x - 5 \times 4 = 8$$

$$2x - 20 = 8$$

$$2x = 28$$

$$x = 14$$

	Feedback
A	Since neither variable can be eliminated by addition or subtraction, multiply both equations by a number to make a pair of coefficients match.
B	When multiplying an equation by a number, be sure to multiply each term by the number.
C	Correct!
D	Since neither variable can be eliminated by addition or subtraction, multiply both equations by a number to make a pair of coefficients match.

PTS: 1 DIF: Average REF: Lesson 5-5

OBJ: 5-5.1 Determine the best method for solving systems of equations.

STA: {Key}9.0 TOP: Determine the best method for solving systems of equations

KEY: System of Equations | Solve Problems MSC: CAHSEE | Key

63. ANS: D

Use elimination by multiplication.

Multiply the top equation by -8.

$$-8\left(\frac{1}{4}x + \frac{3}{4}y = 1\right) \rightarrow -2x - 6y = -8$$

Then, when the two equations are added, the result is $0 = 0$.

This is an identity; therefore, there are infinitely many solutions.

Feedback	
A	Since neither variable can be eliminated by addition or subtraction, multiply one equation by a number to make a pair of coefficients match.
B	The result is $0 = 0$. What does this mean?
C	Since neither variable can be eliminated by addition or subtraction, multiply one equation by a number to make a pair of coefficients match.
D	Correct!

PTS: 1 DIF: Average REF: Lesson 5-5

OBJ: 5-5.1 Determine the best method for solving systems of equations.

STA: {Key}9.0 TOP: Determine the best method for solving systems of equations

KEY: System of Equations | Solve Problems

MSC: CAHSEE | Key

64. ANS: D

Multiply both sides of the inequality by the reciprocal of the fraction on the left. Remember to flip the inequality sign since you will be multiplying by a negative number.

Feedback	
A	You multiplied both sides of the inequality by the denominator of the fraction on the left. Now you need to divide both sides by the numerator.
B	Your answer is the reciprocal of the fraction on the left. You need to multiply both sides of the inequality by this number.
C	Did you remember to flip the inequality sign when multiplying by a negative number?
D	Correct!

PTS: 1 DIF: Basic REF: Lesson 6-2

OBJ: 6-2.1 Solve linear inequalities by using multiplication.

STA: {Key}5.0

TOP: Solve linear inequalities by using multiplication

KEY: Linear Inequalities | Multiplication

MSC: CAHSEE | Key

65. ANS: B

Divide both sides of the inequality by the constant on the left.

Feedback	
A	There is no need to flip the inequality sign since you are dividing by a positive number.
B	Correct!
C	Use division instead of subtraction to solve this.
D	Use division instead of multiplication to solve this.

PTS: 1 DIF: Average REF: Lesson 6-2

OBJ: 6-2.2 Solve linear inequalities by using division.

STA: {Key}5.0

TOP: Solve linear inequalities by using division

KEY: Linear Inequalities | Division

MSC: CAHSEE | Key

66. ANS: B

First combine the constants by subtracting the constant term on the left from both sides. Next, divide both sides by the coefficient of the variable.

	Feedback
A	You must do the subtraction first and then the division.
B	Correct!
C	You forgot to divide both sides by the coefficient of the variable.
D	There is no need to flip the inequality sign since you are dividing by a positive number.

PTS: 1 DIF: Average REF: Lesson 6-3

OBJ: 6-3.1 Solve linear inequalities with integers involving more than one operation.

STA: {Key}4.0 | {Key}5.0

TOP: Solve linear inequalities with integers involving more than one operation

KEY: Linear Inequalities | Integers MSC: CAHSEE | Key

67. ANS: A

First add the two variable terms in the numerator. Secondly, multiply both sides by the denominator. Next, add the constant term on the left to both sides. Finally, divide both sides by the coefficient of the variable.

	Feedback
A	Correct!
B	There is no need to flip the inequality sign since you are multiplying and dividing by positive numbers.
C	Check the order of your steps. You must add the constant to both sides before you divide by the coefficient of the variable.
D	Check the order of your steps. You must multiply both sides by the denominator before you add the constant to both sides.

PTS: 1 DIF: Average REF: Lesson 6-3

OBJ: 6-3.2 Solve linear inequalities with fractions involving more than one operation.

STA: {Key}4.0 | {Key}5.0

TOP: Solve linear inequalities with fractions involving more than one operation

KEY: Linear Inequalities | Fractions MSC: CAHSEE | Key

68. ANS: C

Add the constant term on the left to both sides. Then, subtract the variable term on the right from both sides. Divide both sides by the coefficient of the variable.

	Feedback
A	Be sure to add the constant on the left to both sides and subtract the variable term on the right from both sides.
B	Are you sure that your decimal point is in the right place?
C	Correct!
D	Did you divide both sides by the coefficient of the variable?

PTS: 1 DIF: Average REF: Lesson 6-3

OBJ: 6-3.3 Solve linear inequalities with decimals involving more than one operation.

STA: {Key}4.0 | {Key}5.0

TOP: Solve linear inequalities with decimals involving more than one operation

KEY: Linear Inequalities | Decimals MSC: CAHSEE | Key

69. ANS: C

Using the Distributive Property, multiply to eliminate the parentheses. Combine like terms and then solve the inequality for g .

	Feedback
A	Double-check your calculations. The set of real numbers means that the inequality resulted in a statement that is always true.
B	Double-check your calculations on the right side of the inequality. Remember that the product of two negative numbers is a positive number.
C	Correct!
D	Double-check your calculations. The empty set means that the inequality resulted in a false statement.

PTS: 1 DIF: Average REF: Lesson 6-3

OBJ: 6-3.4 Solve linear inequalities with integers involving the Distributive Property.

STA: {Key}4.0 | {Key}5.0

TOP: Solve linear inequalities with integers involving the Distributive Property

KEY: Linear Inequalities | Integers | Distributive Property MSC: CAHSEE | Key

70. ANS: A

Solve each of the inequalities for u . Combine the two resulting inequalities into one sentence and graph it on the number line. Be careful to include the endpoint on the left but not the value on the right.

	Feedback
A	Correct!
B	Double-check your calculations and your graph.
C	Remember that an open circle on a graph means the endpoint is not included and a solid circle means it is included.
D	Did you use subtraction to solve the first equation and addition to solve the second?

PTS: 1 DIF: Basic REF: Lesson 6-4

OBJ: 6-4.1 Solve compound inequalities containing the word and and graph their solution sets.

STA: {Key}4.0 | {Key}5.0

TOP: Solve compound inequalities containing the word and and graph their solution sets

KEY: Compound Inequalities | Graphs | Solution Set MSC: CAHSEE | Key

71. ANS: D

Solve each of the inequalities for v . The union of the two inequalities will be the set of all real numbers.

	Feedback
A	Is this the union of the two inequalities?
B	This is only the solution to the first inequality.
C	This is only the solution to the second inequality.
D	Correct!

PTS: 1 DIF: Average REF: Lesson 6-4

OBJ: 6-4.2 Solve compound inequalities containing the word or and graph their solution sets.

STA: {Key}4.0 | {Key}5.0

TOP: Solve compound inequalities containing the word or and graph their solution sets

KEY: Compound Inequalities | Graphs | Solution Set MSC: CAHSEE | Key

72. ANS: C

The difference between the listed weight and the actual weight is less than or equal to 1.4 grams. Let w be the actual weight. Write an absolute value inequality and solve.

Feedback	
A	Did you consider the case that the expression inside the absolute value symbol is positive?
B	Did you consider the case that the expression inside the absolute value symbol is negative?
C	Correct!
D	Be careful with your greater than and less than symbols.

PTS: 1

DIF: Basic

REF: Lesson 6-6

OBJ: 6-6.2 Apply absolute value inequalities in real-world problems.

STA: 3.0

TOP: Apply absolute value inequalities in real-world problems.

KEY: Absolute Value | Inequalities | Real-World Problems

MSC: CAHSEE

73. ANS: C

The difference between the average score and the actual score is less than or equal to 6 points. Let x be the actual score. Write an absolute value inequality and solve.

Feedback	
A	What are the minimum and maximum scores?
B	Be careful with your greater than and less than symbols. What are the minimum and maximum scores?
C	Correct!
D	Be careful with your greater than and less than symbols.

PTS: 1

DIF: Basic

REF: Lesson 6-6

OBJ: 6-6.2 Apply absolute value inequalities in real-world problems.

STA: 3.0

TOP: Apply absolute value inequalities in real-world problems.

KEY: Absolute Value | Inequalities | Real-World Problems

MSC: CAHSEE

74. ANS: A

Graph the lines as boundaries. If the inequality is “less than or equal to” or “greater than or equal to,” the boundary line will be solid to include the points on the line. If the inequality is “less than” or “greater than,” the boundary line will be dotted to not include the points on the line. For each line, shade the half-plane that satisfies the inequality. The solution is the set of points where the shading overlaps.

Feedback	
A	Correct!
B	Did you graph the lines correctly?
C	Be sure that you shaded the correct half planes.
D	A solid line means that the points on the line are included in the solution, and a dotted line means they are not included.

PTS: 1

DIF: Average

REF: Lesson 6-7

OBJ: 6-7.1 Solve systems of inequalities by graphing.

STA: {Key}6.0

TOP: Solve systems of inequalities by graphing

KEY: System of Inequalities | Graphing

MSC: CAHSEE | Key