

Instructional Materials for WCSD Math Common Finals

The Instructional Materials are for student and teacher use and are aligned to the 2021-22 Course Guides for the following courses:

High School Algebra 1 S1

- #2201 Algebra 1 S1
- #7769 Foundations in Algebra 1 S1

Middle School Algebra 1 S1

- #228 Algebra 1 (Semester 1)
- #217A VMS ALG 1 S1
- #776 ACCEL Algebra 1

When used as test practice, success on the Instructional Materials does not guarantee success on the district math common final or the Nevada End of Course Exam.

Students can use these Instructional Materials to become familiar with the format and language used on the district common finals. Familiarity with standards and vocabulary as well as interaction with the types of problems included in the Instructional Materials can result in less anxiety on the part of the students. The length of the actual final exam may differ in length from the Instructional Materials.

Teachers can use the Instructional Materials in conjunction with the course guides to ensure that instruction and content is aligned with what will be assessed. The Instructional Materials are not representative of the depth or full range of learning that should occur in the classroom.

Algebra 1 Reference Sheet

Note: You may use these formulas throughout this entire test.

Linear

Slope $m = \frac{y_2 - y_1}{x_2 - x_1}$

Midpoint $M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

Distance $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Slope-Intercept Form $y = mx + b$

Quadratic

Vertex-Form $y = a(x - h)^2 + k$

Standard Form $y = ax^2 + bx + c$

Intercept Form $y = a(x - p)(x - q)$

Exponential

(h, k) Form $y = ab^{x-h} + k$

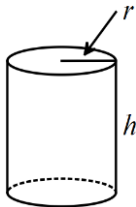
Probability

$$P(A \text{ and } B) = P(A) \cdot P(B)$$

$$P(A \text{ and } B) = P(A) \cdot P(B|A)$$

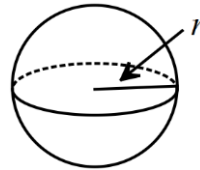
$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

Volume and Surface Area



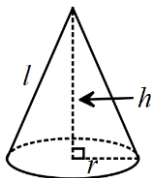
$$V = \pi r^2 h$$

$$SA = 2(\pi r^2) + h(2\pi r)$$



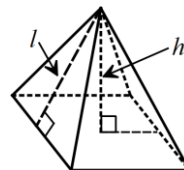
$$V = \frac{4}{3} \pi r^3$$

$$SA = 4\pi r^2$$



$$V = \frac{1}{3} \pi r^2 h$$

$$SA = \pi r^2 + \frac{1}{2} (2\pi r \cdot l)$$

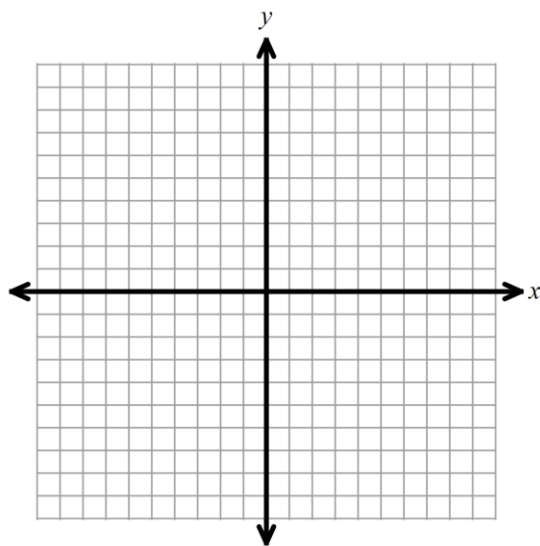
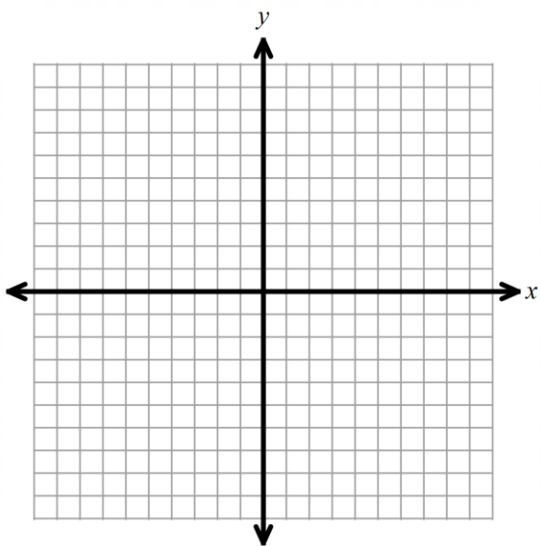
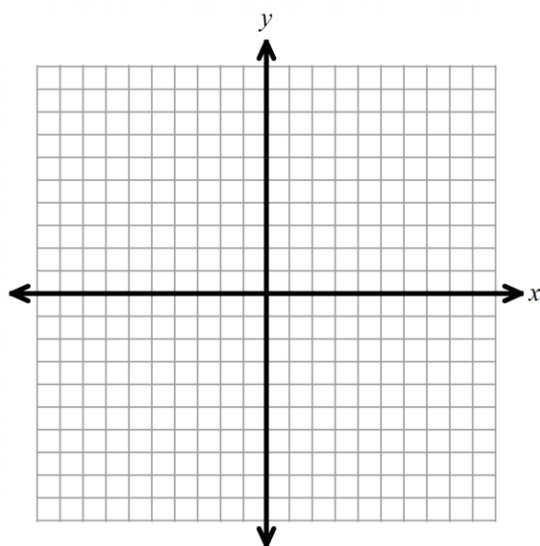
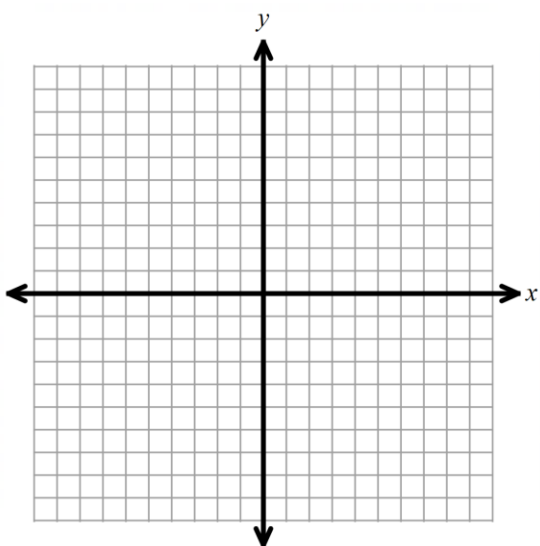
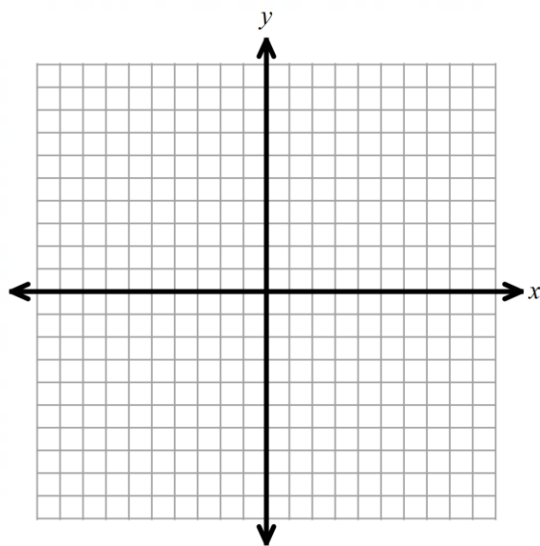
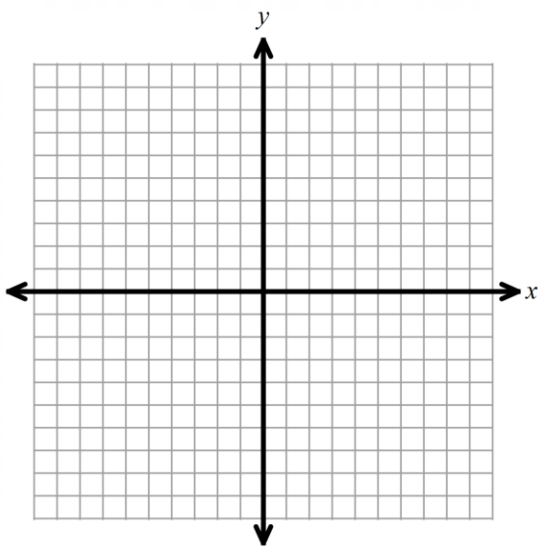


$$V = \frac{1}{3} Bh$$

$$SA = B + \frac{1}{2} (Pl)$$

Where B = base area
and P = base perimeter

Student Work Area



1. Which of the following could be the first step in solving $\frac{1}{2}(x + 3) = \frac{2}{3}$?

Select all that apply.

- F. Distribute $\frac{1}{2}$ to $(x + 3)$ on the left side of the equation
- G. Subtract 3 from both sides of the equation
- H. Multiply by the reciprocal of $\frac{1}{2}$ on both sides of the equation
- I. Divide by $\frac{1}{2}$ on both sides of the equation
- J. Distribute $\frac{2}{3}$ to $\frac{1}{2}(x + 3)$ on the left side of the equation

2. A person took a bicycle ride.

- They rode for 1.5 hours at a rate of r miles per hour.
- Then they increased that rate by 2 miles per hour and rode for 2.5 more hours.
- They rode a total of 41 miles.

Which equation can be used to determine the value of r ?

- A. $1.5r + 2.5(r + 2) = 41$
- B. $(1.5 + 2.5)(2r + 2) = 41$
- C. $1.5r + 2.5(2r) = 41$
- D. $1.5r + 2.5r + 2 = 41$

3. In the problem below, only one of the steps was justified with the correct property.

Steps	Justification
$6(3x - 4) - 26 = 40$	Original Problem
$18x - 24 - 26 = 40$	Associative Property of Multiplication
$18x - 50 = 40$	Addition Property of Equality
$18x = 90$	Distributive Property
$x = 5$	Division Property of Equality

Which justification was used correctly in the problem?

- A. Associative Property of Multiplication
- B. Addition Property of Equality
- C. Distributive Property
- D. Division Property of Equality

4. Solve the equation $34.8x + 0.2(x - 4) = -16.8 + 27x$.
Bubble your answer in the grid provided below.

+	-	•	•	•	•	•	•
-	/	/	/	/	/	/	/
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

5. What is the solution for x in $5x - 2 + 2x = 7x - 2$?

- A. $x = 0$
- B. $x = 1$
- C. *no solution*
- D. *infinitely many solutions*

6. In the equation, $a = \frac{b-c}{d-e}$ solve for b .

A. $b = a(d - e) + c$

C. $b = \frac{a}{d - e} + c$

B. $b = -\frac{c}{a(d - e)}$

D. $b = ad + \frac{c}{e}$

7. Which of the following inequalities represents the solution to $3a + 3 - 6a > 15$?

A. $a < -6$

C. $a < -4$

B. $-6 < a < -4$

D. $a > -4$

8. The soccer club president is planning to order shirts for each of the club's 15 members. It will cost \$45 for the design to be created and an additional cost for each shirt. The cost of each shirt varies depending on the type of shirt chosen with the prices shown below. The club president must order the same type of shirt for all of the members and cannot spend more than \$135. Based on this information, which type(s) of shirts can the club president choose to purchase?

Tank Top	\$3 each
Short Sleeve	\$4 each
Long Sleeve	\$6 each
Sweatshirt	\$9 each

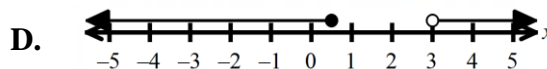
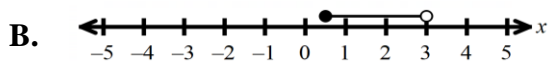
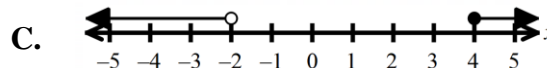
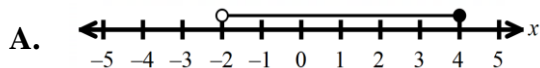
A. Sweatshirt

B. Long Sleeve

C. Sweatshirt, Long Sleeve, Short Sleeve or Tank Top

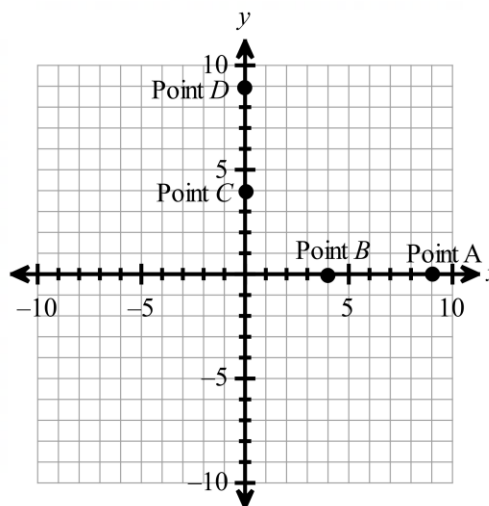
D. Long Sleeve, Short Sleeve or Tank Top

9. Which of the following represents the solution to the compound inequality,
 $2x + 5 < 1$ or $4x - 7 \geq 9$?



10. A linear function has a slope of $-\frac{2}{3}$ and goes through the point $(0, 6)$. What point on the graph represents the x -intercept of the function?

- A. Point A
- B. Point B
- C. Point C
- D. Point D



11. A line graphed on the coordinate plane has a slope of 2 and contains the point $(3, 1)$. Which of the following points is on the same line?
- A. $(-3, -5)$
 - B. $(-3, -2)$
 - C. $(0, -5)$
 - D. $(-5, 0)$

ALGEBRA 1 SEMESTER 1 INSTRUCTIONAL MATERIALS

HS Courses: #2201 Algebra 1 S1 and #7769 Foundations in Algebra 1 S1
 MS Courses: #218 Algebra 1, #217A VMS ALG 1 S1, and #776 ACCEL Algebra 1

2021-2022

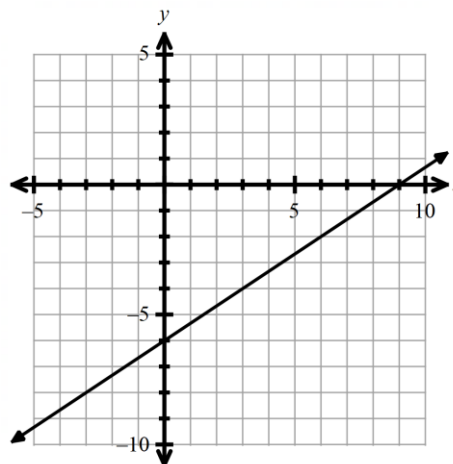
12. What is the equation of the line graphed below?

A. $y = \frac{2}{3}x + 9$

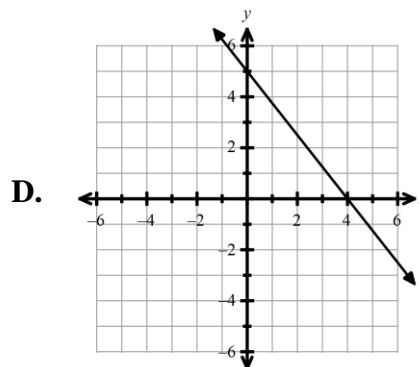
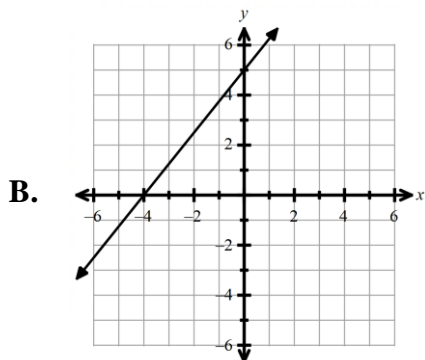
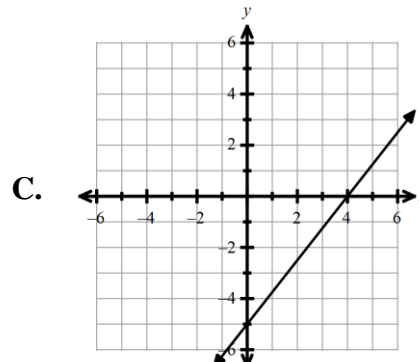
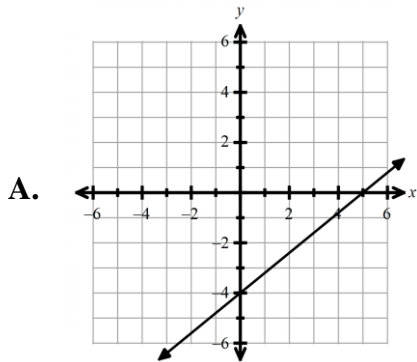
B. $y = \frac{2}{3}x - 6$

C. $y = \frac{3}{2}x + 9$

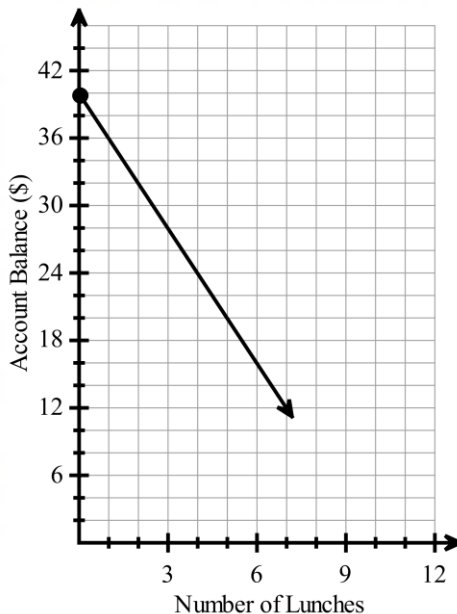
D. $y = \frac{3}{2}x - 6$



13. Which is the graph of $5x = 4y + 20$?



14. The graph below shows the account balance of a student’s lunch money account.



Which of the following statements are true? Select all that apply.

- F. Each lunch costs \$4.
- G. Each lunch costs \$3.
- H. The account started with a balance of \$40.
- I. The student won't have any money left in the account after eating 7 lunches.
- J. The student has enough money in the account to pay for 40 lunches.

15. Which equation of the line passes through the points $(\frac{3}{2}, 5)$ and $(-\frac{1}{2}, 8)$?

A. $y = \frac{3}{2}(x + \frac{1}{2}) + 8$

C. $y = -\frac{3}{2}(x - \frac{1}{2}) + 8$

B. $y = \frac{3}{2}(x + \frac{3}{2}) + 5$

D. $y = -\frac{3}{2}(x - \frac{3}{2}) + 5$

16. Select the equations that have a slope of $\frac{1}{2}$ and go through the point $(-6, 2)$. Select all that apply

F. $y - 6 = \frac{1}{2}(x + 2)$

G. $y - 2 = \frac{1}{2}(x + 6)$

H. $x + 2y = 5$

I. $y = \frac{1}{2}x + 5$

J. $x - 2y = -10$

K. $y = \frac{1}{2}x + 2$

17. What are the coordinates of the x -intercept of the equation $6x - 3y = 24$?

A. $(0, -8)$

C. $(-8, 0)$

B. $(0, 4)$

D. $(4, 0)$

18. The table shows how the cost of an automobile repair depends on the time the repair takes.

Automobile Repair Costs	
Time (hours)	Cost (dollars)
1	85
2	145
3	205
4	265
5	325

A customer spends \$640 for an automobile repair. Which equation can be solved for x , the time in hours that the repair took?

A. $60x + 85 = 640$

C. $60x + 25 = 640$

B. $25x + 60 = 640$

D. $85x + 60 = 640$

19. Given the graph and the equation, which statement about the slopes is correct?

Line A	Line B
	$3x - y = 12$

- A. Line A has a larger value for slope
 - B. Line B has a larger value for slope
 - C. Line A and Line B have the same slope
 - D. Cannot be determined
20. A linear function passes through the points $(10, 5)$ and $(-15, -5)$. A second function is represented by the equation $4x - 3y = 6$. What is the y-intercept of the function with the greater rate of change?
- A. -20
 - B. $\frac{3}{2}$
 - C. -2
 - D. 1

21. Line 1 passes through the points $(-4, 8)$ and $(12, -2)$. Line 2 is perpendicular to Line 1. What is the slope of Line 2?

Bubble your answer in the grid provided below.

+	•	•	•	•	•	•
-		7	7	7	7	
	0	0	0	0	0	0
	1	1	1	1	1	1
	2	2	2	2	2	2
	3	3	3	3	3	3
	4	4	4	4	4	4
	5	5	5	5	5	5
	6	6	6	6	6	6
	7	7	7	7	7	7
	8	8	8	8	8	8
	9	9	9	9	9	9

22. Which line is parallel to the graph of $4x + 8y = 32$?

A. $y = -\frac{1}{2}x$

C. $y + 1 = 2(x - 6)$

B. $y = 8$

D. $y + 5 = -\frac{1}{8}(x + 2)$

23. Determine which tables and graphs represent functions. Select all that apply.

F.

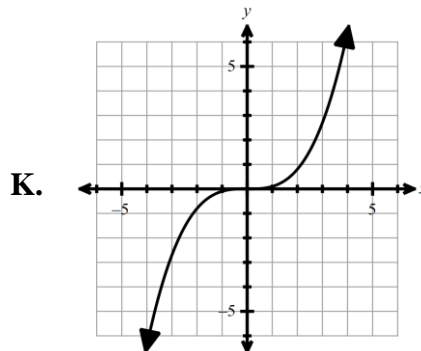
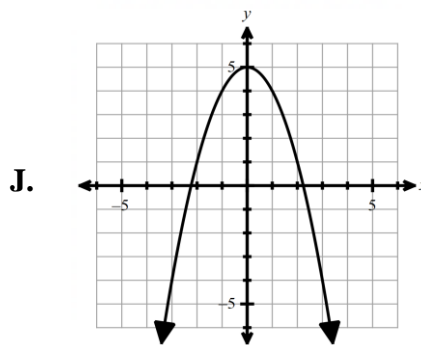
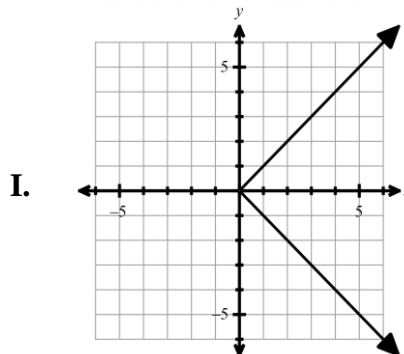
<i>domain</i>	<i>range</i>
2	5
3	5
4	5
5	5

G.

<i>domain</i>	<i>range</i>
2	4
3	6
3	8
5	10

H.

<i>domain</i>	<i>range</i>
1	1
2	2
3	3
4	4



24. Kaj needs to build 15 birdhouses for a class project. It takes 20 minutes to build each birdhouse. The number of minutes it takes Kaj to build birdhouses is a function of the number of birdhouses she builds. Which statement correctly describes the domain or range of this function?

- A. The domain is the set of all real numbers.
- B. The domain is the set of all integers from 0 to 15.
- C. The range is the set of all real numbers.
- D. The range is the set of all integers 0 to 300.

25. If $h(x) = -\frac{1}{2}x + 3$, find the value of $h(-29)$.

A. $\frac{35}{2}$

C. 64

B. $\frac{32}{3}$

D. $\frac{29}{2}x - 87$

26. The point $(-12, n)$ is an ordered pair of the function $f(x) = 3x - 9$. What is the value of n ?
Bubble your answer in the grid below.

+	•	•	•	•	•	•
-		/	/	/	/	
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

27. A cell phone company charges a monthly fee of \$45 for a single phone line and \$15 for every gigabyte (GB) of data used per month. Which function models the total monthly cost of the cell phone line?

A. $f(x) = 30x$

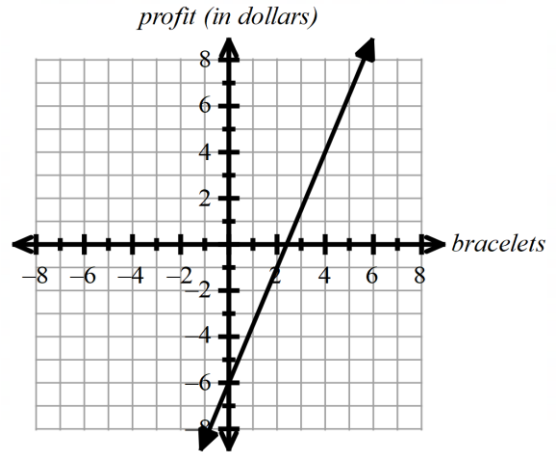
C. $f(x) = 15 + 45x$

B. $f(x) = 60x$

D. $f(x) = 45 + 15x$

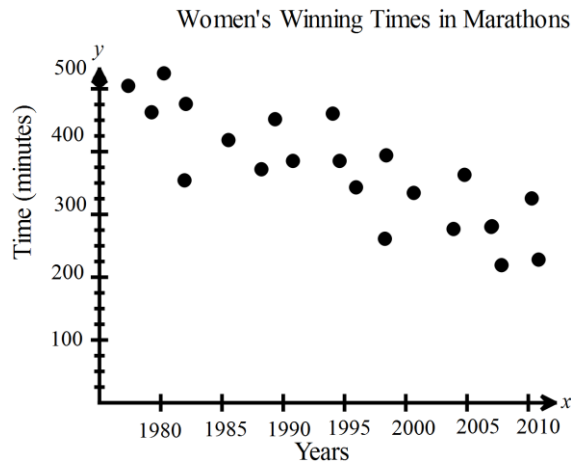
28. The graph below represents the amount of profit (in dollars) a company expects to make from selling bracelets. According to this model, how much money would the company make if they sell 400 bracelets? Round your answer to the nearest dollar if necessary.

- A. \$994
- B. \$400
- C. \$162
- D. \$154



29. An apple orchard allows people to come and pick their own apples. Customers pay \$5 for a basket and \$0.10 for each apple. The function $f(x) = 0.10x + 5$ gives the cost for x apples picked. What is the range of the function?
- A. $\{all\ real\ numbers\}$
 - B. $\{0, 1, 2, 3, 4, 5 \dots\}$
 - C. $\{0, 0.10, 0.20, 0.30, 0.40, 0.50 \dots\}$
 - D. $\{5, 5.10, 5.20, 5.30, 5.40, 5.50 \dots\}$

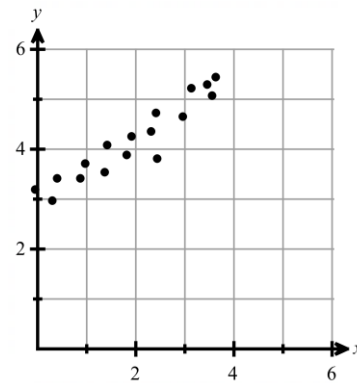
30. Describe the relationship between the two variables based on the scatterplot below.



- A. As the winning times increase, the years decrease.
- B. As the years increase, the winning times increase.
- C. As the years decrease, the winning times decrease.
- D. As the years increase, the winning times decrease.

31. Which of the following is a reasonable trend line (line of best fit) for the scatterplot below?

- A. $y = \frac{1}{3}x + 8$
- B. $y = \frac{1}{2}x - 3$
- C. $y = \frac{2}{3}x + 3$
- D. $y = 3x + 3$



32. The first five terms of a sequence are given below:

29	25	21	17	13
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Which equation describes the n^{th} term of the sequence?

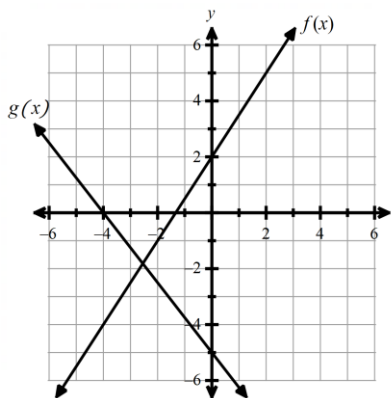
- A. $f(n) = -4n + 33$
- B. $f(n) = 4n + 28$
- C. $f(n) = 4n + 17$
- D. $f(n) = -4n - 23$

33. An exercise program begins the first week with 30 minutes of daily exercise. Each week, the daily exercise is increased by 5 minutes. Which function, explicit formula or recursive formula represents the number of minutes of daily exercise in the n^{th} week? Select all that apply.

- F. $f(1) = 30, f(n) = 5f(n - 1), \text{ for } n \geq 2$
- G. $f(n) = 5n + 30$
- H. $a_n = a_{n-1} + 5, a_1 = 30$
- I. $a_n = 5 + 30n$
- J. $a_n = 25 + 5n$
- K. $f(n) = 5n + 25$
- L. $f(1) = 30, f(n) = f(n - 1) + 5, \text{ for } n \geq 2$

34. The functions $f(x)$ and $g(x)$ are graphed below. Approximate the value x when $f(x) = g(x)$.

- A. $x = -4$
- B. $x = -2.5$
- C. $x = -1.8$
- D. $x = 2$



35. The equations of four lines are given below.
 Select **two** equations that form a system with no solutions.

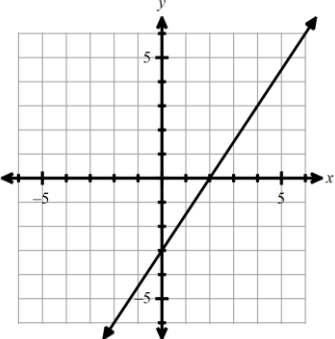
F. $y = -2(x + 1) - 7$

G. $x - 3y = 9$

H. $y = -\frac{1}{2}(x - 4) - 1$

I. $y = \frac{1}{3}x + 2$

36. The graph and a table of values are given to represent two linear equations in a system of equations.
 Which of the following is the solution to the system?

Line A	Line B								
	<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">x</th> <th style="padding: 5px;">y</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 5px;">-1</td> <td style="text-align: center; padding: 5px;">6</td> </tr> <tr> <td style="text-align: center; padding: 5px;">0</td> <td style="text-align: center; padding: 5px;">4</td> </tr> <tr> <td style="text-align: center; padding: 5px;">1</td> <td style="text-align: center; padding: 5px;">2</td> </tr> </tbody> </table>	x	y	-1	6	0	4	1	2
x	y								
-1	6								
0	4								
1	2								

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

37. Which equation would make this system have an infinite number of solutions?

$$\begin{cases} y = x + 2 \\ \underline{\hspace{2cm}} \end{cases}$$

- | | |
|--|--|
| <ul style="list-style-type: none"> A. $2y = 2x + 4$ B. $y - x = 3$ | <ul style="list-style-type: none"> C. $y = 2x$ D. $y = 3x - 1$ |
|--|--|

38. The equation and a table of values are given to represent two linear equations in a system of equations. Which of the following is the solution to the system?

Line A	Line B								
$y = -3x - 4$	<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">x</th> <th style="width: 50%; text-align: center;">y</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">-1</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">-2</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">-5</td> </tr> </tbody> </table>	x	y	-1	4	1	-2	2	-5
x	y								
-1	4								
1	-2								
2	-5								

- A. (0, 1)
 B. (-2, 2)
 C. infinite number of solutions
 D. no solution
39. Which x-coordinate is in the solution to the system of equations?

$$\begin{cases} x - 2y = 5 \\ 3x + 8y = 1 \end{cases}$$

- A. $x = -1$
 B. $x = 3$
 C. $x = 19$
 D. no solution
40. Which y-coordinate is in the solution to the system of equations?

$$\begin{cases} y = 0.5x + 2 \\ -y = 3 - x \end{cases}$$

- A. $y = 5$
 B. $y = 8$
 C. $y = 7$
 D. $y = 14$

41. You invited friends over to your house to watch a movie. You let each person decide if they wanted to snack on popcorn, which costs \$2.50 per person, or candy, which costs \$1.75 per person. You spent \$17.75 to buy snacks for 8 people. Write a system of equations that you could use to determine how many people chose popcorn (p) and how many chose candy (c).

A. $f(x) = \begin{cases} 2.50p + 1.75c = 8 \\ p + c = 17.75 \end{cases}$

C. $f(x) = \begin{cases} 17.75 - 2.5p = 8 \\ 17.75 - 1.5c = 8 \end{cases}$

B. $f(x) = \begin{cases} 2.50p + 8p = 17.75 \\ 1.75c + 8c = 17.75 \end{cases}$

D. $f(x) = \begin{cases} 2.50p + 1.75c = 17.75 \\ p + c = 8 \end{cases}$

42. Two different families bought general admission tickets for a Reno Aces baseball game. One family paid \$71 for 6 adults and 2 children. The other family paid \$56.50 for 3 adults and 4 children. How much more does an adult ticket cost than a child's ticket? Bubble your answer in the grid provided below.

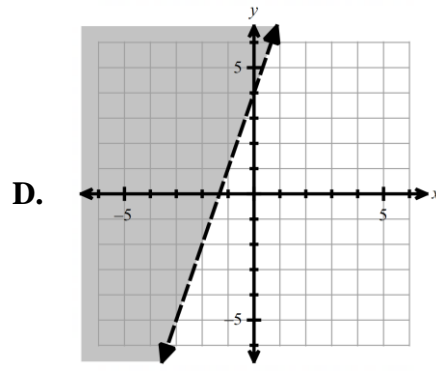
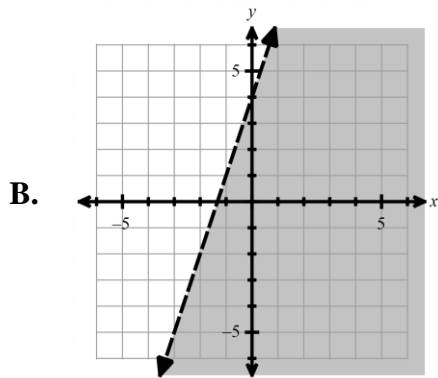
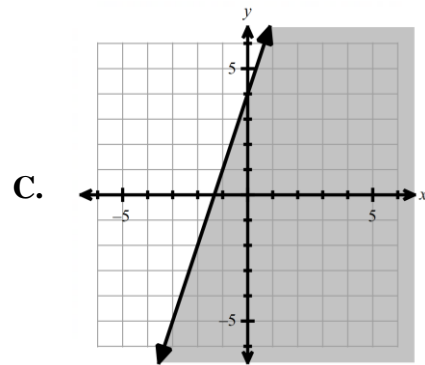
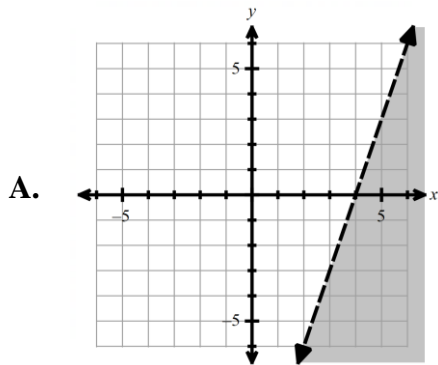
+	•	•	•	•	•	•
-	/	/	/	/	/	/
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

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43. Which is the graph of $y < 3x + 4$?

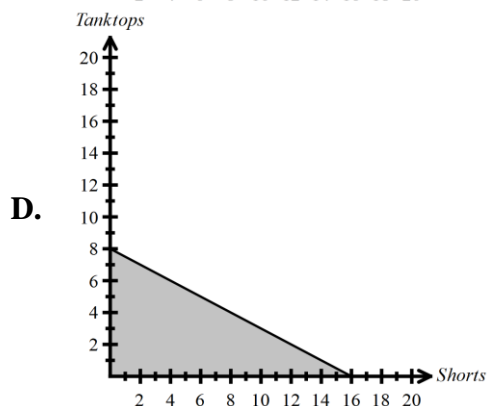
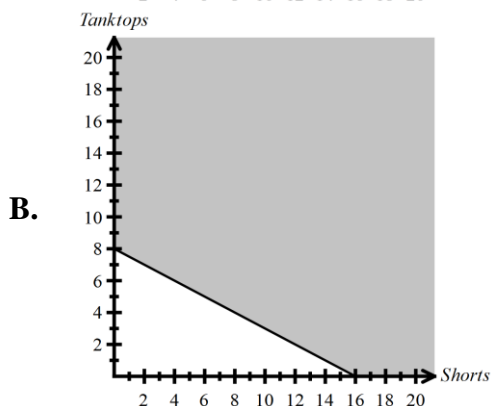
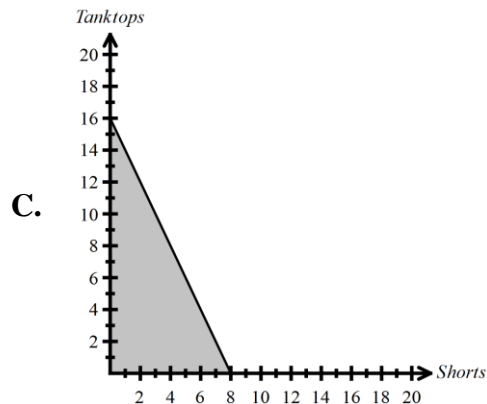
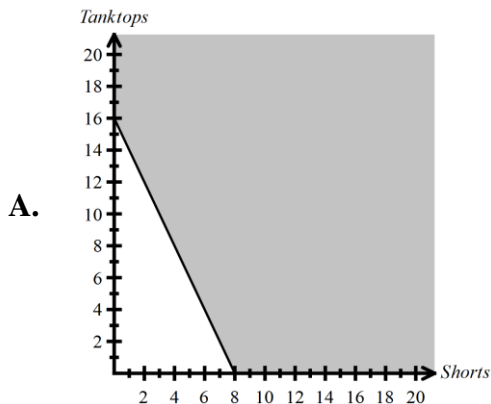


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44. Tandy has at most \$100 to spend on summer clothes. If shorts cost \$12.50 a pair and tanktops cost \$6.25 each, which graph represents the possible combinations of shorts and tanktops that Tandy can buy?



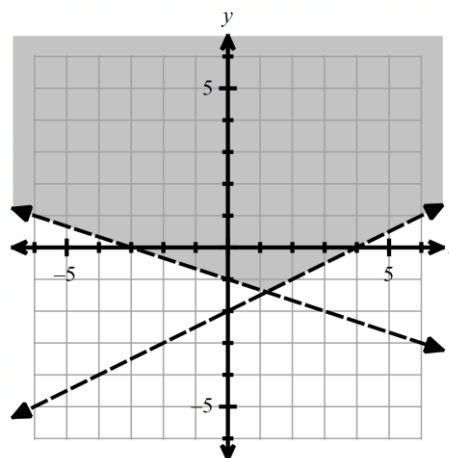
45. Which system of inequalities models the graph below?

A.
$$\begin{cases} y < \frac{1}{3}x - 1 \\ 2x + 4y > 8 \end{cases}$$

B.
$$\begin{cases} y < -\frac{1}{3}x - 1 \\ 2x - 4y > 8 \end{cases}$$

C.
$$\begin{cases} y > -\frac{1}{3}x - 1 \\ 2x - 4y < 8 \end{cases}$$

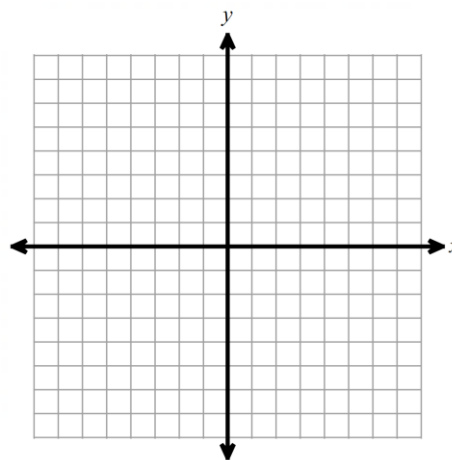
D.
$$\begin{cases} y > \frac{1}{3}x - 1 \\ 2x + 4y < 8 \end{cases}$$



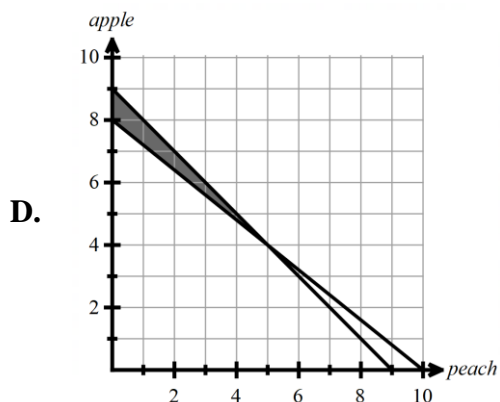
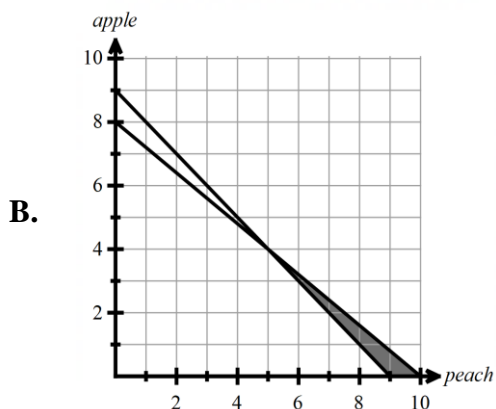
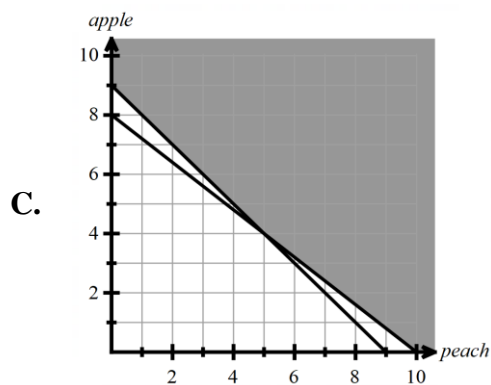
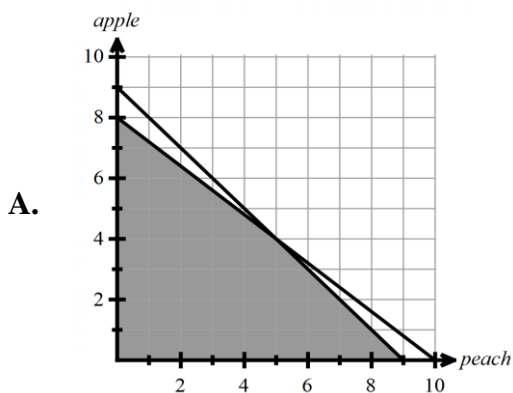
46. Which of the following points is a possible solution to the following system?

$$\begin{cases} y \geq -4 \\ 3x - 6y > 12 \end{cases}$$

- A. (1, -6)
- B. (6, 1)
- C. (-3, 2)
- D. (3, -2)



47. Jesse wants to plant peach and apple trees in his backyard. He can fit at most 9 trees. Each peach tree costs \$60, and each apple tree costs \$75. If he only has \$600 to spend, make a graph showing the number of each kind of tree that he can buy.



48. Which of the following is the solution for x in the equation $-2|x + 3| + 6 = 10$?

A. *no solution*

C. $x = 1$

B. $x = -5, x = -1$

D. $x = -5$

49. Which of the following is the solution for x in the equation $-3|x + 4| = -6$?

A. $x = -2$

C. $x = -2$ and $x = 6$

B. $x = -6$ and $x = -2$

D. *no solution*

50. Determine the domain and range of $g(x) = -\frac{1}{2}|x|$.
Select all that apply.

F. *domain: $x \leq 0$*

G. *range: $y \leq 0$*

H. *domain: $x \leq -\frac{1}{2}$*

I. *range: $y \leq -\frac{1}{2}$*

J. *domain: all real numbers*

K. *range: all real numbers*

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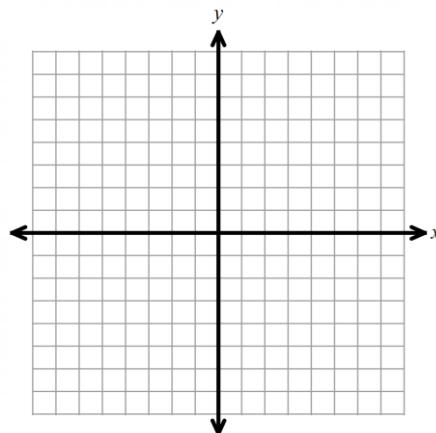
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51. On the graph to the right, graph the piecewise function:

$$f(x) = \begin{cases} x - 3, & x \geq 0 \\ -x - 3, & x < 0 \end{cases}$$

Which of the following functions produces the same graph as the piecewise function graphed above?



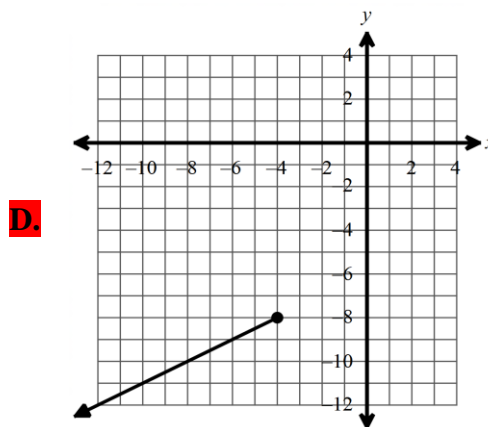
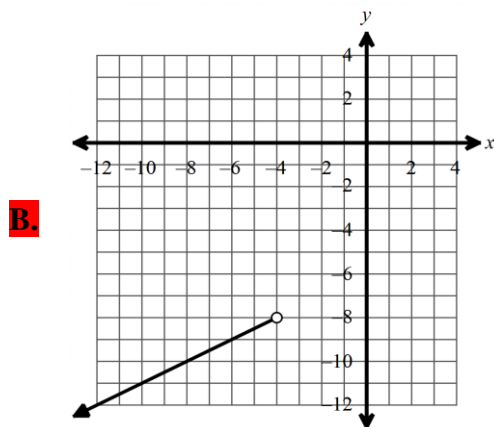
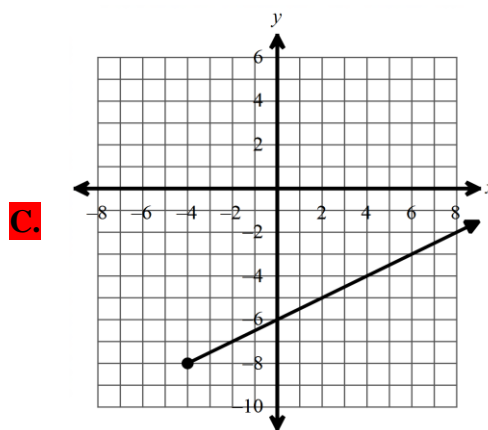
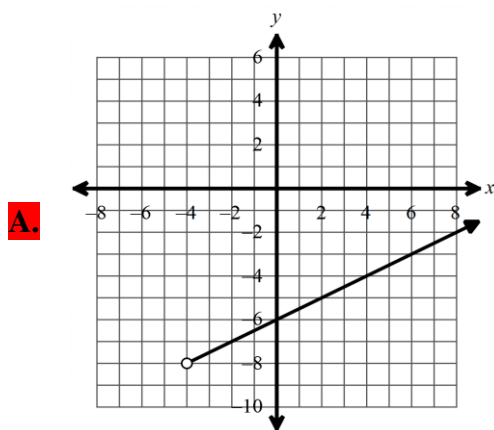
A. $f(x) = |x| - 3$

C. $f(x) = x - 3$

B. $f(x) = -|x| - 3$

D. $f(x) = -x - 3$

52. Which of the following graphs represents the function $f(x) = \frac{1}{2}x - 6$ for $x > -4$?



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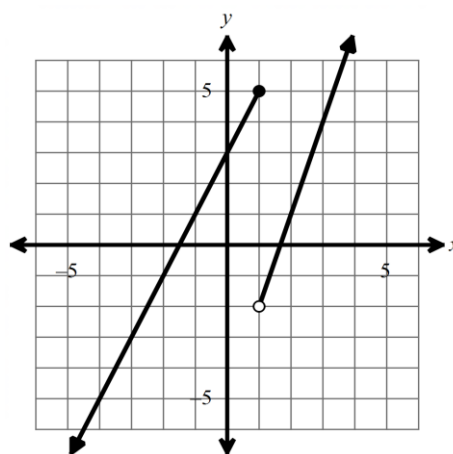
53. Which piecewise function is represented by the graph?

A. $f(x) = \begin{cases} 2x - 3, & x < 1 \\ 3x - 5, & x > 1 \end{cases}$

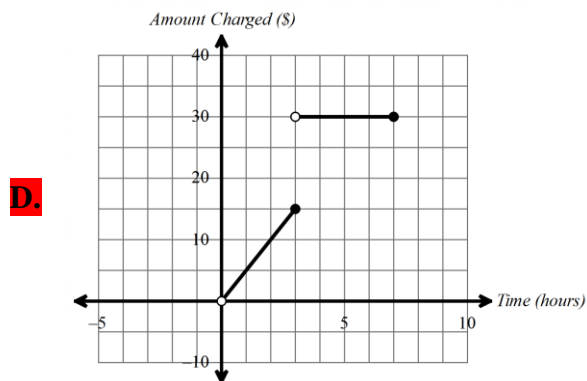
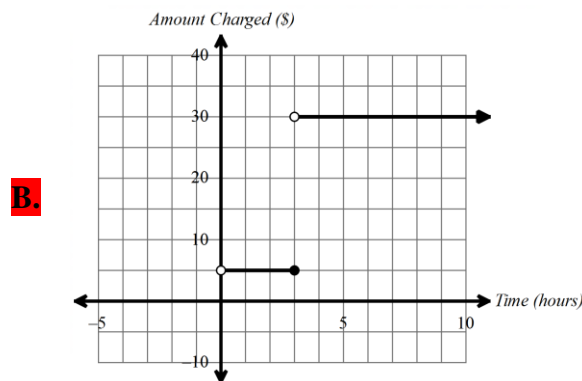
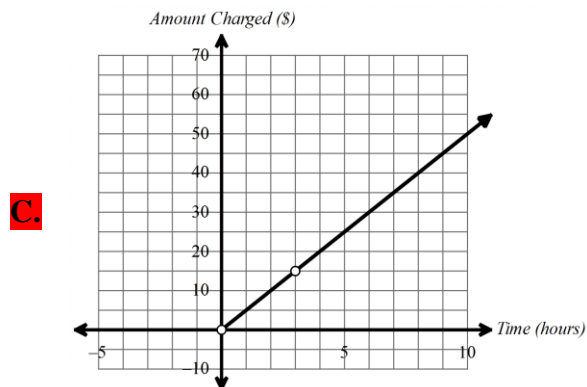
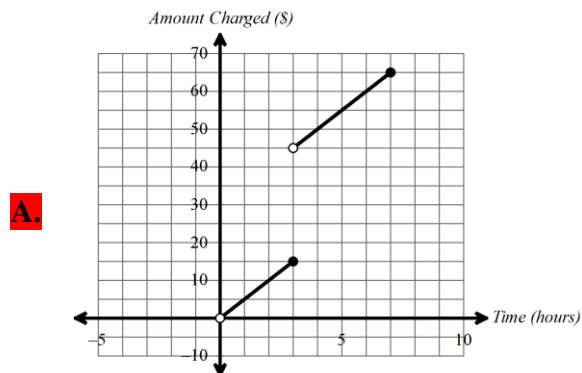
B. $f(x) = \begin{cases} 2x + 3, & x \leq 1 \\ 3x - 5, & x > 1 \end{cases}$

C. $f(x) = \begin{cases} 2x + 3, & x \geq 1 \\ 3x - 5, & x > 1 \end{cases}$

D. $f(x) = \begin{cases} 2x - 3, & x < 1 \\ 3x - 5, & x \geq 1 \end{cases}$

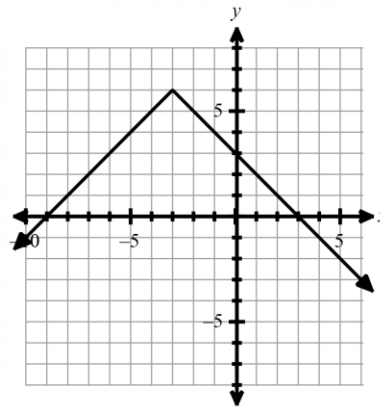


54. During weekends, Jodie will babysit for a maximum of 7 hours. For the first 3 hours, Jodie charges her customers a rate of \$5 per hour. If she babysits for more than 3 hours, then Jodie charges her customers a flat rate of \$30. Which of the following graphs models the situation?

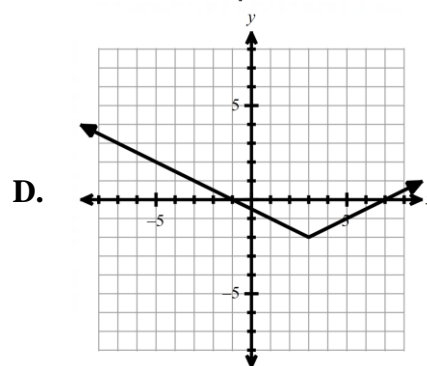
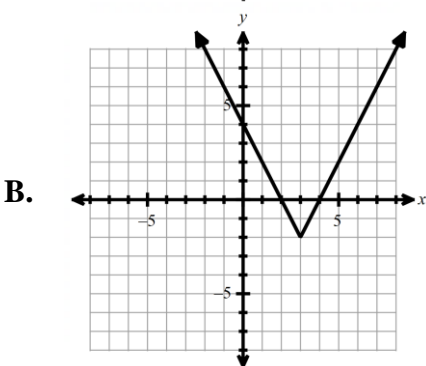
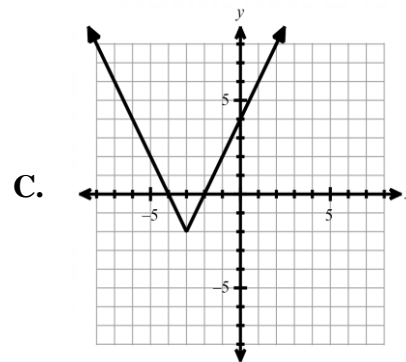
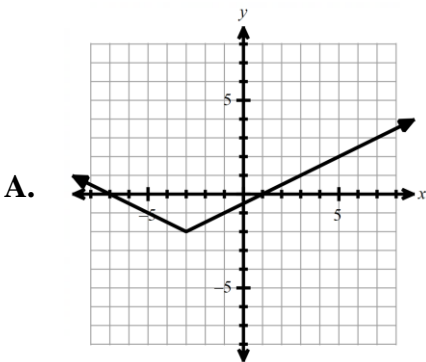


55. Given the function graphed below, over what part of the domain is the function decreasing?

- A. $x > 6$
- B. $x < 6$
- C. $x > -3$
- D. $x < -3$



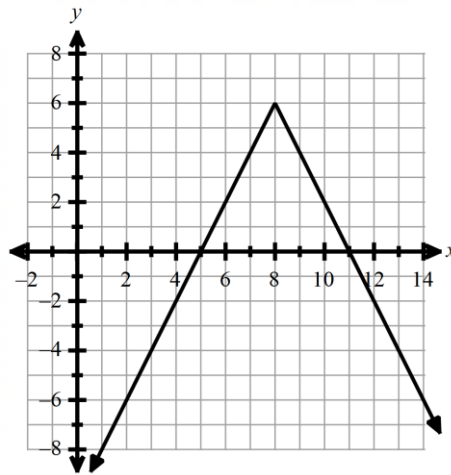
56. Which of the following graphs represents $f(x) = \frac{1}{2}|x - 3| - 2$?



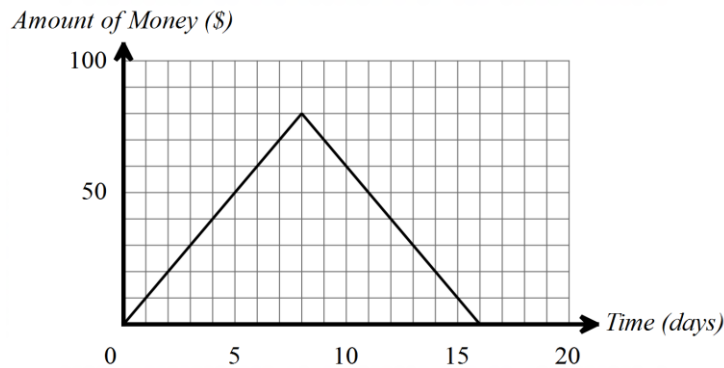
57. Which of the following correctly describes how the graph of $g(x) = -4|x + 2| - 3$ is transformed from the graph of the parent function $f(x) = |x|$?
- A. The graph of $g(x)$ is reflected over the y -axis, vertically compressed by a factor of 4, translated 2 units left and 3 units down from the parent function.
 - B. The graph of $g(x)$ is reflected over the y -axis, vertically compressed by a factor of 4, translated 3 units left and 2 units up from the parent function.
 - C. The graph of $g(x)$ is reflected over the x -axis, vertically stretched by a factor of 4, translated 2 units left and 3 units down from the parent function.
 - D. The graph of $g(x)$ is reflected over the x -axis, vertically stretched by a factor of 4, translated 3 units left and 2 units up from the parent function.
58. Identify the vertex and the axis of symmetry of the function $f(x) = |x + 3| - 6$. Select all that apply.
- F. Vertex: $(3, 6)$
 - G. Vertex: $(-3, -6)$
 - H. Vertex: $(6, -3)$
 - I. Axis of symmetry: $x = -3$
 - J. Axis of symmetry: $y = 3$
 - K. Axis of symmetry: $x = 6$
 - L. Axis of symmetry: $y = -6$

59. What absolute value function is represented by the graph below?

- A. $f(x) = \frac{1}{2}|x - 8| + 6$
- B. $f(x) = -2|x - 8| + 6$
- C. $f(x) = \frac{1}{2}|x - 6| + 8$
- D. $f(x) = -2|x - 6| + 8$

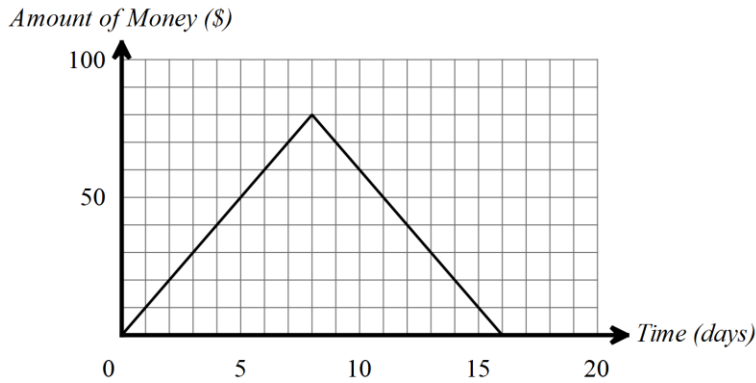


60. Julian wants to save \$10 per day for 8 days. He then plans to spend \$10 per day for another 8 days. The graph below models the amount of money Julian has each day. On which days will Julian have \$60?



- A. On day 6
- B. On day 6 and day 10
- C. On day 6 and day 12
- D. On day 6 and day 14

61. Julian wants to save \$10 per day for 8 days. He then plans to spend \$10 per day for another 8 days. The graph below models the amount of money Julian has each day. Which of the following functions can be used to represent this situation?



- A. $y = 10(x + 8) - 10$ if $0 \leq x \leq 16$
- B. $y = 8(x - 10) + 10$ if $0 \leq x \leq 80$
- C. $y = -10|x + 80| + 8$ if $0 \leq x \leq 80$
- D. $y = -10|x - 8| + 80$ if $0 \leq x \leq 16$

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Algebra 1 Semester 1 Instructional Materials 2021-22 Answers

<u>Topic 1</u> Solving Equations & Inequalities			<u>Topic 2</u> Linear Equations			<u>Topic 3</u> Linear Functions		
#	Ans	Standard	#	Ans	Standard	#	Ans	Standard
1.	F, H, I	HSA.REI.A.1	10.	A	HSF.IF.C.7a	23.	F, H, J, K	HSF.IF.A.1
2.	A	HSA.CED.A.1	11.	C	HSF.IF.C.7a	24.	B	HSF.IF.B.5
3.	D	HSA.REI.A.1	12.	B	HSA.CED.A.2 HSF.IF.C.7a	25.	A	HSF.IF.A.2
4.	-2.0	HSA.REI.B.3	13.	C	HSF.IF.C.7a	26.	-45	HSF.IF.A.2 HSA.IF.A.1
5.	D	HSA.REI.B.3	14.	F, H	HSS.ID.C.7	27.	D	HSF.LE.A.2
6.	A	HSA.CED.A.4	15.	D	HSA.CED.A.2 HSF.LE.A.2	28.	A	HSA.CED.A.2 HSF.LE.A.2 HSS.ID.C.7
7.	C	HSA.REI.B.3	16.	G, I, J	HSA.CED.A.2	29.	D	HSF.IF.A.2 HSF.IF.B.5
8.	D	HSA.CED.A.1 HSA.CED.A.3	17.	D	HSS.ID.C.7	30.	D	HSS.ID.C.7 HSS.ID.B.6
9.	C	HSA.REI.B.3	18.	C	HSA.CED.A.1	31.	C	HSS.ID.B.6.A HSS.ID.B.6.C
			19.	A	HSS.ID.C.7	32.	A	HSF.IF.A.1 HSF.LE.A.2
			20.	C	HSS.ID.C.7	33.	H, J, K, L	HSF.BF.A.1 HSF.BF.A.2
			21.	$\frac{8}{5}$	HSA.CED.A.2 HSG.GPE.B.5			
			22.	A	HSA.CED.A.2 HSG.GPE.B.5			

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Algebra 1 Semester 1 Instructional Materials 2021-22 Answers					
Topic 4 Systems of Equations & Inequalities			Topic 5 Absolute Value Functions		
#	Ans	Standard	#	Ans	Standard
34.	B	HSA.REI.C.6	48.	A	HSA.CED.A.1
35.	G, I	HSA.REI.C.6	49.	B	HSA.CED.A.1
36.	A	HSA.REI.C.6 HSA.CED.A.2	50.	G, J	HSF.IF.B.4
37.	A	HSA.REI.C.6	51.	A	HSF.IF.C.7.b
38.	D	HSA.REI.C.6 HSA.CED.A.2	52.	A	HSF.IF.C.7b
39.	B	HSA.REI.C.5 HSA.REI.C.6	53.	B	HSF.IF.C.7b
40.	C	HSA.REI.C.5 HSA.REI.C.6	54.	D	HSF.IF.B.4 HSF.IF.B.6
41.	D	HSA.CED.A.2	55.	C	HSF.IF.B.4
42.	2.50	HSA.REI.C.5 HSA.REI.C.6 HSA.CED.A.2 HSA.CED.A.3	56.	D	HSF.IF.C.7.b
43.	B	HSA.REI.D.12 HSA.CED.A.3	57.	C	HSF.BF.B.3
44.	C	HSA.REI.D.12 HSA.CED.A.3	58.	G, I	HSF.IF.C.7.b
45.	C	HSA.REI.D.12 HSA.CED.A.3	59.	B	HSF.BF.B.3
46.	D	HSA.REI.D.12 HSA.CED.A.3	60.	B	HSF.IF.B.4
47.	A	HSA.REI.D.12 HSA.CED.A.3	61.	D	HSF.BF.B.3