

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

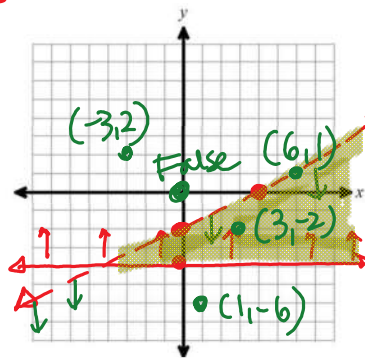
2021-2022

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

$$\begin{cases} y \geq -4 & \text{solid; above} \\ 3x - 6y > 12 & \text{dashed} \end{cases}$$

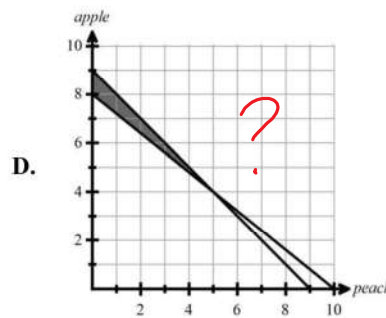
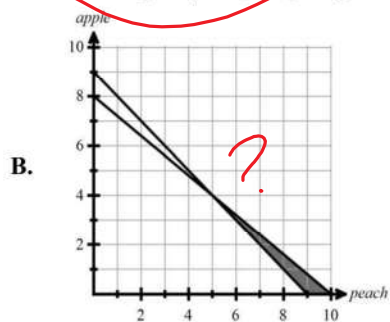
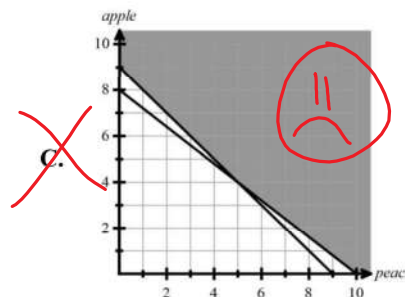
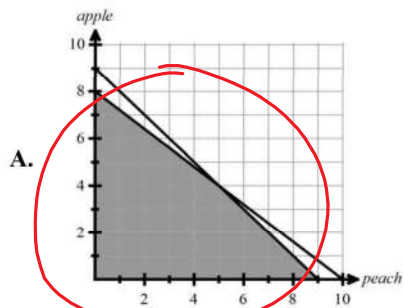
$\frac{3x}{3} = \frac{12}{3}$       $\frac{-6y}{-6} = \frac{12}{-6}$   
 $x = 4$       $y = -2$

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



Check (0,0)  
 $3(0) - 6(0) > 12$   
 $0 > 12$   
No

- A 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.



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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

G, J

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

~~F.~~ domain:  $x \geq 0$  ~~R~~

G. range:  $y \leq 0$

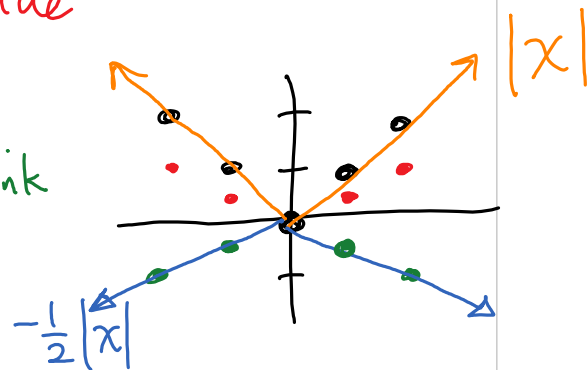
~~H.~~ domain:  $x \leq -\frac{1}{2}$  ~~R~~

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

J. domain: all real numbers ~~h~~

K. range: all real numbers

absolute value  
Vert reflection  
Vert Shrink



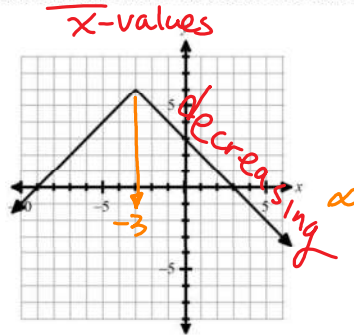
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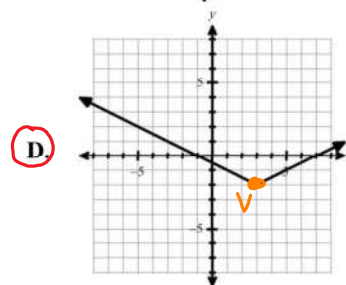
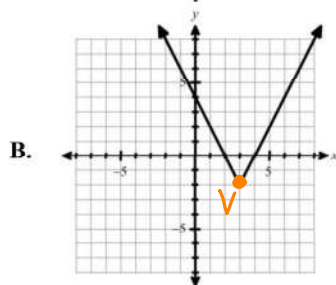
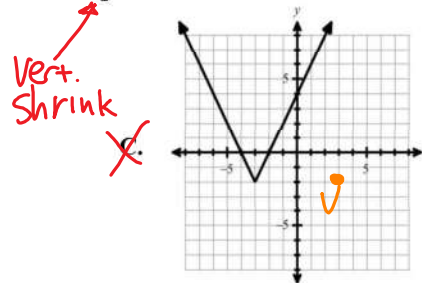
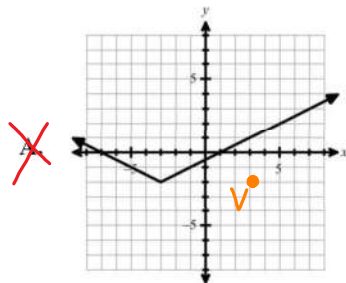
2021-2022

C 55. Given the function graphed below, over what part of the domain is the function decreasing? *from left to right... right...*

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



D 56. Which of the following graphs represents  $f(x) = \frac{1}{2}|x - 3| - 2$ ? *a|x-h|+k* *right down* *V: (3, -2)*

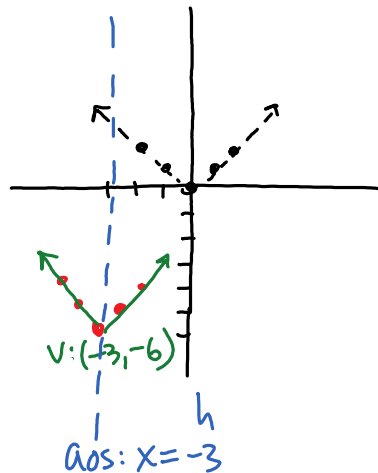


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- C 57. Which of the following correctly describes how the graph of  $g(x) = -4|x + 2| - 3$  is transformed from the graph of the parent function  $f(x) = |x|$ ?
- Handwritten notes:*  $a|x-h|+k$   $k: -3$  down  
parent  $h: -2$  left  
vert refl & stretch
- 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.

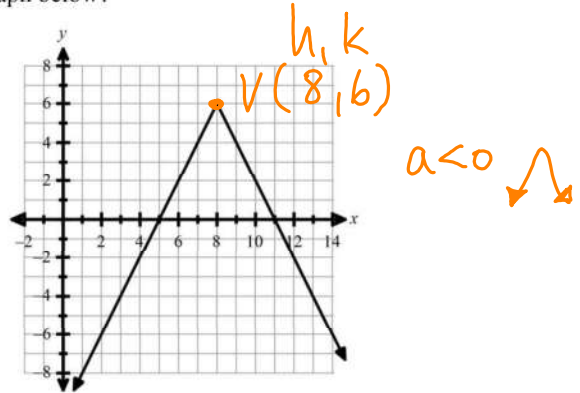
- G, I 58. Identify the vertex and the axis of symmetry of the function  $f(x) = |x + 3| - 6$ .  $V: (-3, -6)$   
Select all that apply.

- 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:  $y = -6$

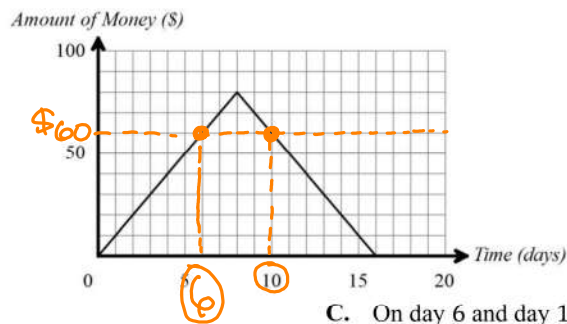


**B 59.** What absolute value function is represented by the graph below?

- $a|x-h|+k$
- ~~A.~~  $f(x) = \frac{1}{2}|x-8|+6$  *h, k*
- B.**  $f(x) = -2|x-8|+6$
- ~~C.~~  $f(x) = \frac{1}{2}|x-6|+8$
- D.  $f(x) = -2|x-6|+8$

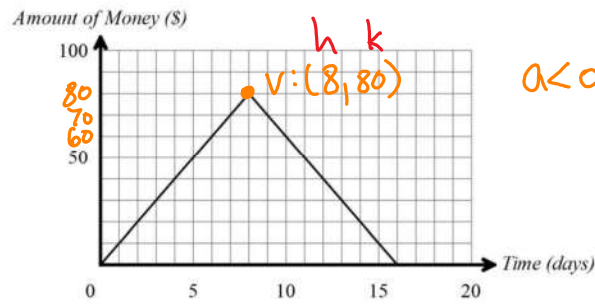


**B 60.** Julian wants to save \$10 per day for 8 days. He then plans to spend \$10 per day for another 8 days. The graph below models the amount of money Julian has each day. On which days will Julian have \$60?



- 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

- D** 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								
Topic 1 Solving Equations & Inequalities			Topic 2 Linear Equations			Topic 3 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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<b>Algebra 1 Semester 1 Instructional Materials 2021-22 Answers</b>					
<b>Topic 4 Systems of Equations &amp; Inequalities</b>			<b>Topic 5 Absolute Value Functions</b>		
#	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.7.b
39.	B	HSA.REI.C.5 HSA.REI.C.6	53.	B	HSF.IF.C.7.b
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

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