

ALEKS® 101 Mock Final #2

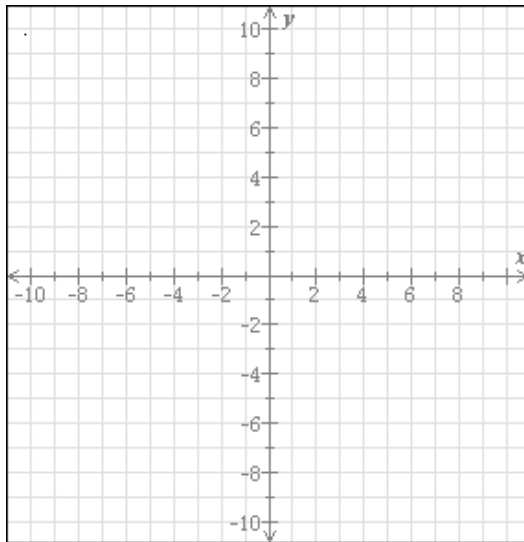
Beginning and Intermediate Algebra Combined / MATH 101 - Fall 2014 – 504 (Prof. Miller)

Student Name/ID:

1. Use the distributive property to remove the parentheses.

$$-7(-6x - 4y + 5)$$

2. Graph the line whose x -intercept is -1 and whose y -intercept is 3



3. In a survey, 200 shoppers were asked whether they have access to a computer at home and if they have a personal e-mail account. Their responses are summarized in the following table.

	E-Mail account	No e-mail account
Computer access at home	64	24
No computer access at home	16	96

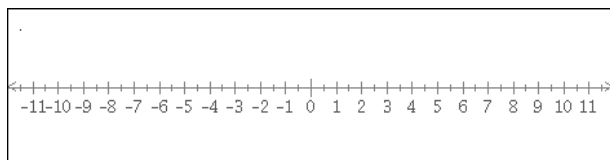
- (a) What percentage of the shoppers have computer access at home?
- (b) What percentage of the shoppers do *not* have an e-mail account?

4. Solve for w

$$73 - w = 204$$

5. Graph the solution to the inequality on the number line.

$$|w + 4| < 5$$



6. Find the x -intercept and y -intercept of the line.

$$-9x + 8y = 10$$

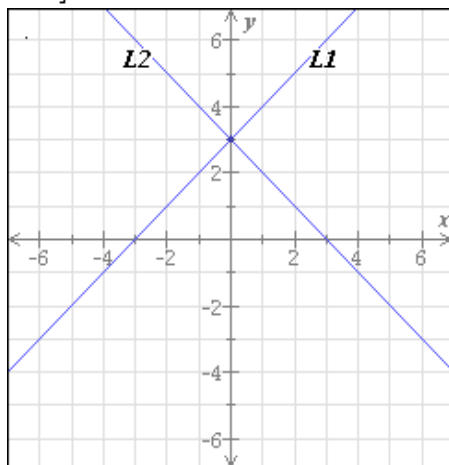
x -intercept: _____

y -intercept: _____

7. For each system of linear equations shown below, classify the system as "consistent dependent," "consistent independent," or "inconsistent." Then, answer the question about its solutions.

$$L1: y = x + 3$$

$$L2: y = -x + 3$$



This system of equations is:

- consistent dependent - consistent independent - inconsistent

This means the system has:

- a unique solution:

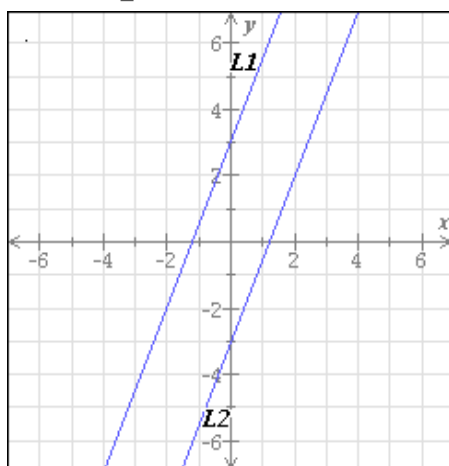
Solution: (,)

- no solution

- infinitely many solutions

$$L1: y = \frac{5}{2}x + 3$$

$$L2: y = \frac{5}{2}x - 3$$



This system of equations is:

- consistent dependent - consistent independent - inconsistent

This means the system has:

- a unique solution:

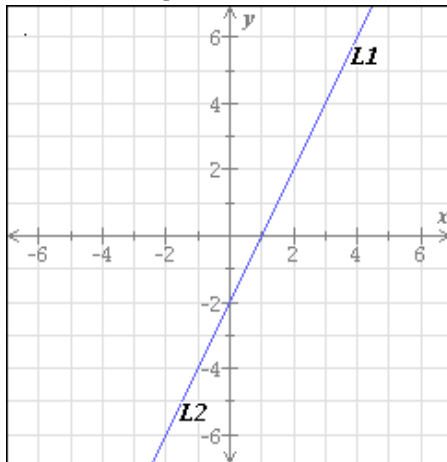
Solution: (\quad, \quad)

- no solution

- infinitely many solutions

L1: $y = 2x - 2$

L2: $-2x + y = -2$



This system of equations is:

- consistent dependent - consistent independent - inconsistent

This means the system has:

- a unique solution:

Solution: (\quad, \quad)

- no solution

- infinitely many solutions

8. Use the distributive property to remove the parentheses.

$$-4(4y - 2u - 3)$$

9. Evaluate.

$$(-5)^3 = \boxed{}$$

$$(-8)^2 = \boxed{}$$

10. A group of 7 students was asked, "How many hours did you watch television last week?" Here are their responses.

19, 19, 15, 7, 18, 19, 19

Find the mean number of hours for these students.
If necessary, round your answer to the nearest tenth.

11. Solve the inequality for x

$$-\frac{5}{9}x - 2 \leq \frac{7}{6}x + \frac{4}{9}$$

Simplify your answer as much as possible.

12. At the movie theatre, child admission is \$5.10 and adult admission is \$8.70. On Sunday, 138 tickets were sold for a total sales of \$995.40. How many adult tickets were sold that day?

13. Lamar rented a truck for one day. There was a base fee of \$20.99 and there was an additional charge of 76 cents for each mile driven. Lamar had to pay \$178.31 when he returned the truck. For how many miles did he drive the truck?

14. Find the slope of the line passing through the points $(2, 5)$ and $(8, -4)$

15. A theater group made appearances in two cities. The hotel charge before tax in the second city was \$1500 higher than in the first. The tax in the first city was 4% and the tax in the second city was 8%. The total hotel tax paid for the two cities was \$810. How much was the hotel charge in each city before tax?

16. Simplify the following expression.

$$-8x^2 + 4 + 10x^2 - 10 - 5x$$

17. For his phone service, Chris pays a monthly fee of \$13 and he pays an additional \$0.07 per minute of use. The least he has been charged in a month is \$112.26.

What are the possible numbers of minutes he has used his phone in a month?

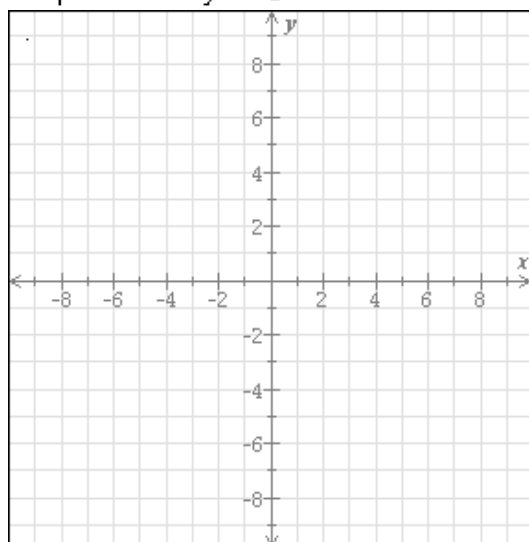
Use m for the number of minutes, and solve your inequality for m .

18. Solve the following system of equations.

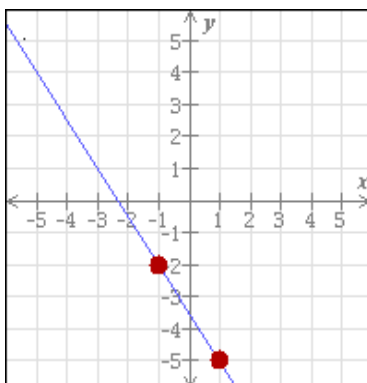
$$3x - 5y = -1$$

$$-7x - 2y = 16$$

19. Graph the line $y = 3$



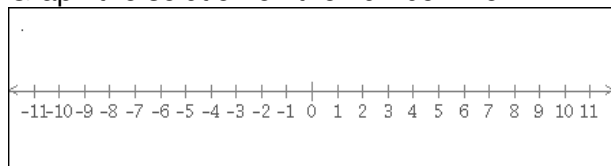
20. Find the slope of the line graphed below.



21. Solve the compound inequality.

$$-4 \leq 4x - 4 \leq 16$$

Graph the solution on the number line.



22. Round 0.347 to the nearest tenth.

23. Solve for w

$$|w| - 21 = -14$$

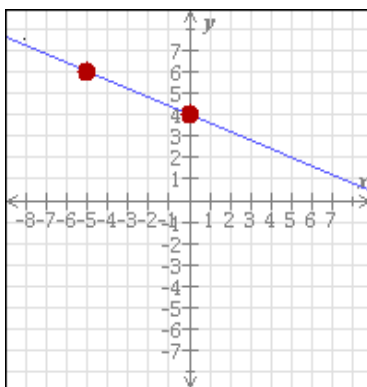
24. Solve for x

$$|x| - 16 = -8$$

25. Find the value of $2u - 6$ given that $-3u - 5 = 7$

Simplify your answer as much as possible.

26. Write an equation of the line below.

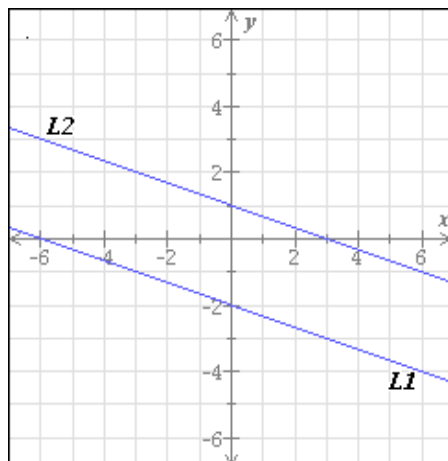


27.

For each system of linear equations shown below, classify the system as "consistent dependent," "consistent independent," or "inconsistent." Then, answer the question about its solutions.

$$L1: y = \frac{-1}{3}x - 2$$

$$L2: y = \frac{-1}{3}x + 1$$



This system of equations is:

- consistent dependent - consistent independent - inconsistent

This means the system has:

- a unique solution:

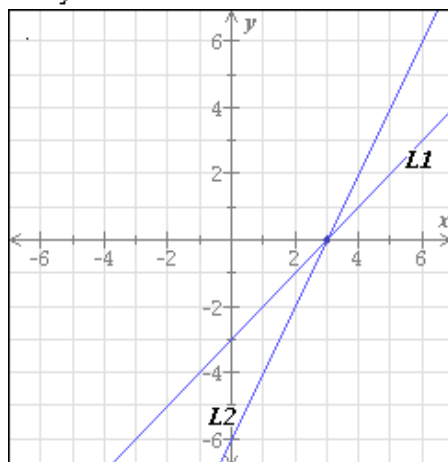
Solution: (,)

- no solution

- infinitely many solutions

$$L1: y = x - 3$$

$$L2: y = 2x - 6$$



This system of equations is:

- consistent dependent - consistent independent - inconsistent

This means the system has:

- a unique solution:

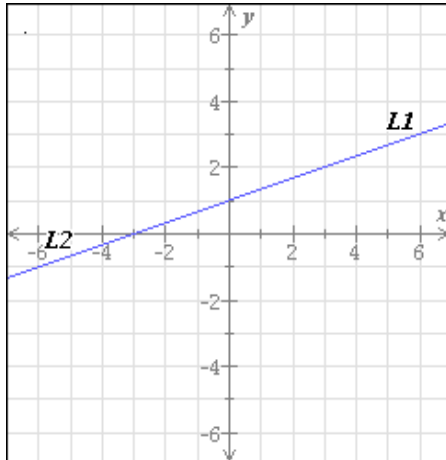
Solution: $\left(\quad , \quad \right)$

- no solution

- infinitely many solutions

$$L1: y = \frac{1}{3}x + 1$$

$$L2: -x + 3y = 3$$



This system of equations is:

- consistent dependent - consistent independent - inconsistent

This means the system has:

- a unique solution:

Solution: $\left(\quad , \quad \right)$

- no solution

- infinitely many solutions

28. Evaluate.

$$16 + 6^2 \div 4$$

29. Add.

$$\frac{8}{9} + \frac{5}{6}$$

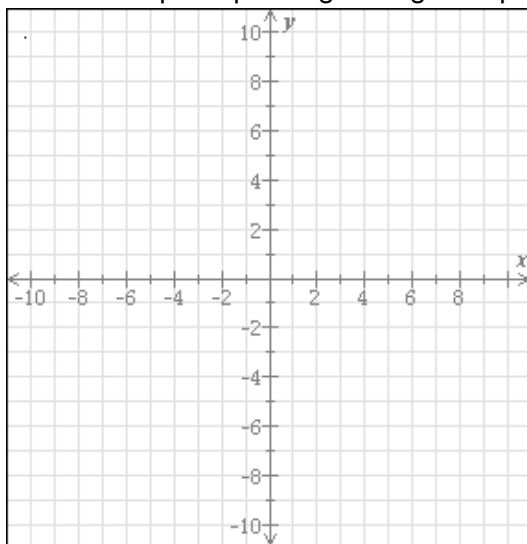
Write your answer as a fraction in simplest form.

30. Translate this sentence into an equation.

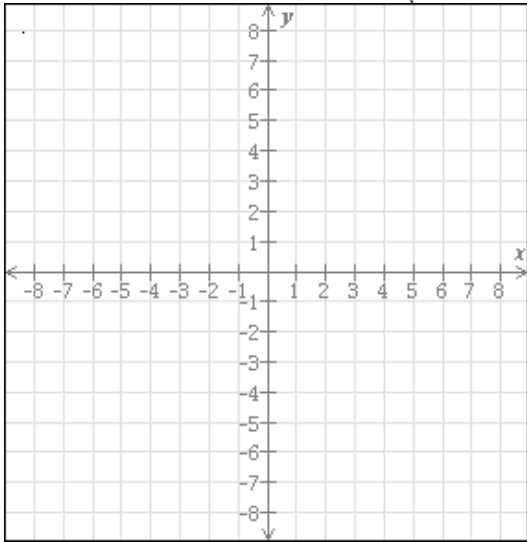
70 is the sum of 22 and Carlos's savings.

Use the variable c to represent Carlos's savings.

31. Graph the line with slope 1 passing through the point $(-1, 2)$



32. Using the pencil, plot the point $(-3, -4)$



33. Solve the following proportion for y

$$\frac{17}{7} = \frac{y}{5}$$

Round your answer to the nearest tenth.

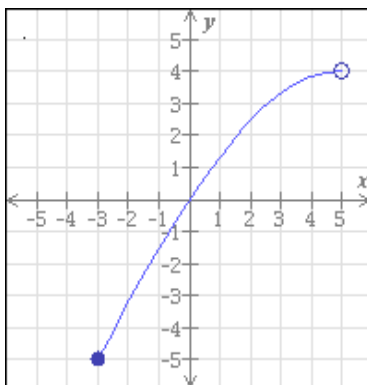
34. Solve for u

$$6u = -30$$

Simplify your answer as much as possible.

35. The entire graph of the function g is shown in the figure below.

Write the domain and range of g using interval notation.



36. Amanda purchased a prepaid phone card for \$15. Long distance calls cost 6 cents a minute using this card. Amanda used her card only once to make a long distance call. If the remaining credit on her card is \$13.92, how many minutes did her call last?

37. Find an ordered pair (x, y) that is a solution to the equation.

$$x - 6y = 6$$

38. Evaluate the following.

$$-5 \times (-7) = \boxed{}$$

$$-54 \div 9 = \boxed{}$$

39. Find the value of $7w - 5$ given that $-3w + 7 = 4$

Simplify your answer as much as possible.

40. Solve the following proportion for v

$$\frac{11}{3} = \frac{v}{10}$$

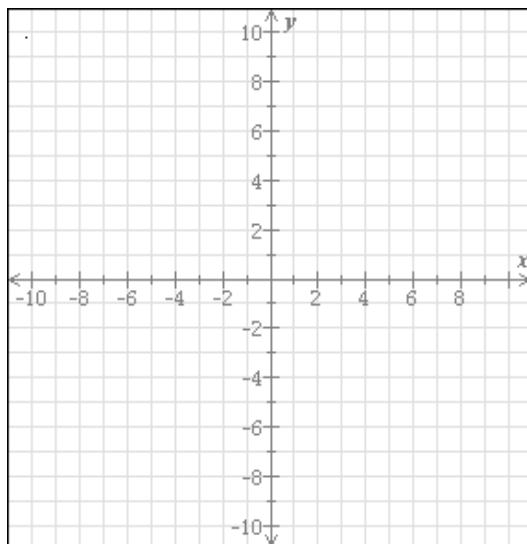
Round your answer to the nearest tenth.

41. Find an ordered pair (x, y) that is a solution to the equation.

$$5x - y = 5$$

42. Jose bought a desktop computer and a laptop computer. Before finance charges, the laptop cost \$450 less than the desktop. He paid for the computers using two different financing plans. For the desktop the interest rate was 6.5% per year, and for the laptop it was 9% per year. The total finance charges for one year were \$409. How much did each computer cost before finance charges?

43. Graph the line whose x -intercept is 4 and whose y -intercept is -3



44. Use substitution to solve the system.

$$5x + 4y = 5$$

$$x = 3y - 18$$

$$x = \boxed{}$$

$$y = \boxed{}$$

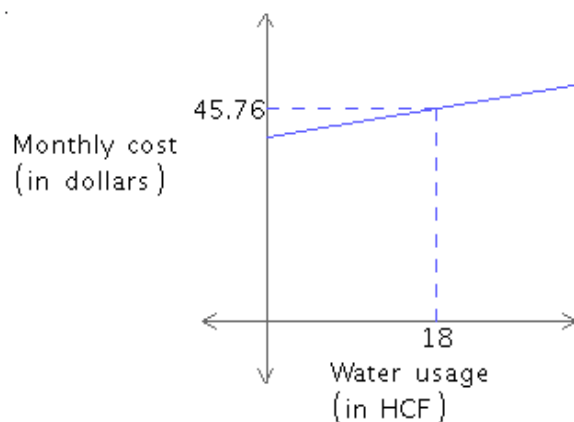
45. Consider the line $8x + 7y = -8$

What is the slope of a line parallel to this line?

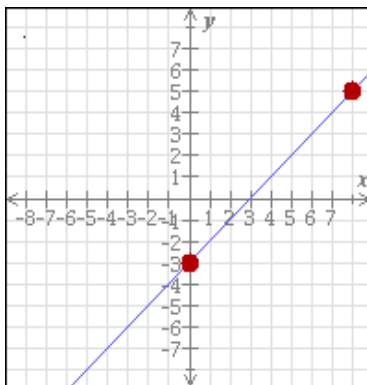
What is the slope of a line perpendicular to this line?

46. Suppose that a household's monthly water bill (in dollars) is a linear function of the amount of water the household uses (in hundreds of cubic feet, HCF). When graphed, the function gives a line with a slope of 1.35. See the figure below.

If the monthly cost for 18 HCF is \$45.76 what is the monthly cost for 12 HCF?



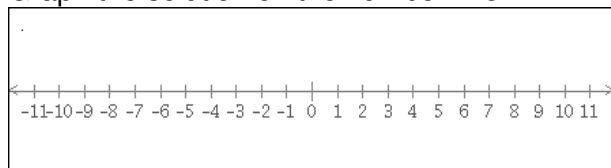
47. Write an equation of the line below.



48. Solve the compound inequality.

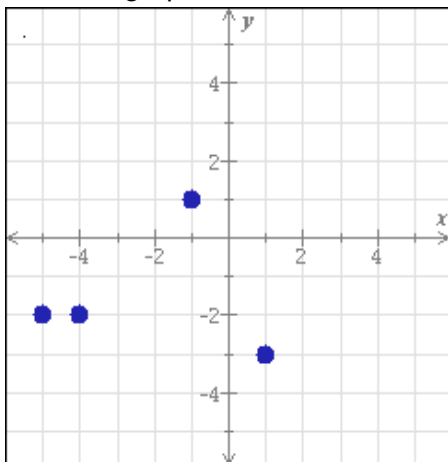
$$7 < 2x + 5 \leq 17$$

Graph the solution on the number line.

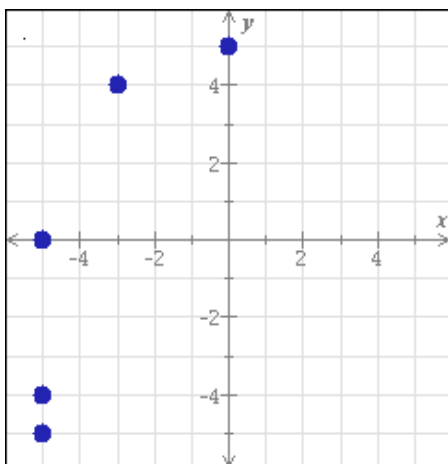


49. What is 40% of 56?

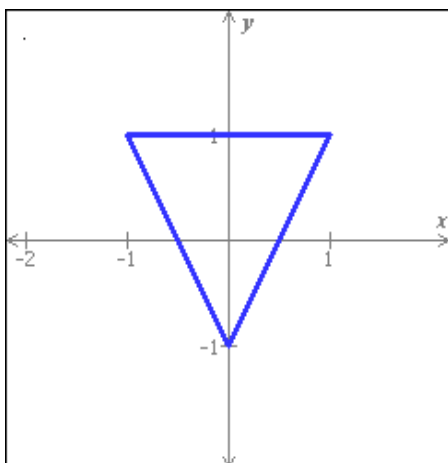
50. For each graph below, state whether it represents a function.



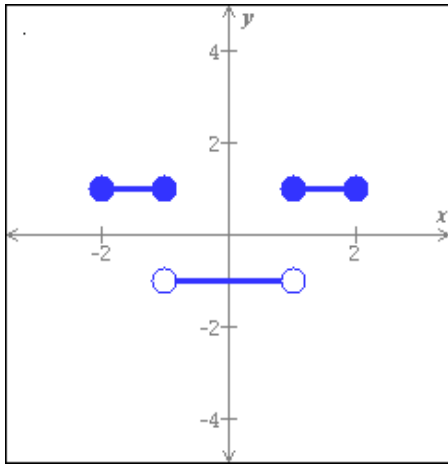
Function?:
Yes No



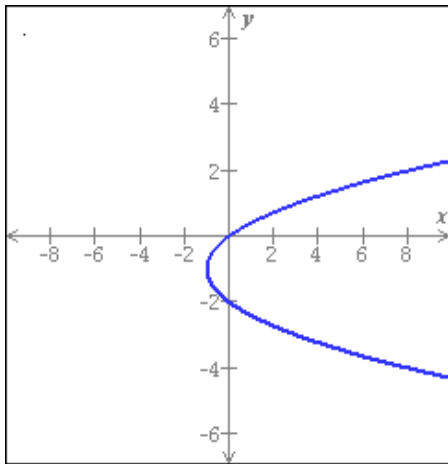
Function?:
Yes No



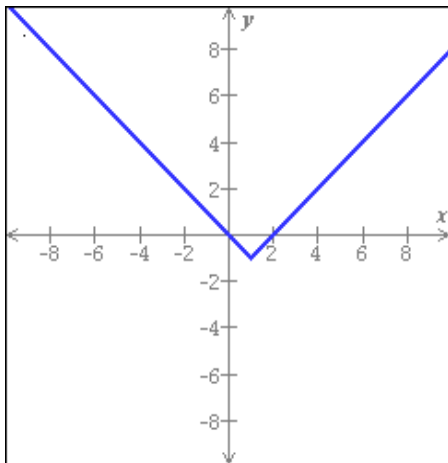
Function?:
Yes No



Function?:
Yes No



Function?:
Yes No

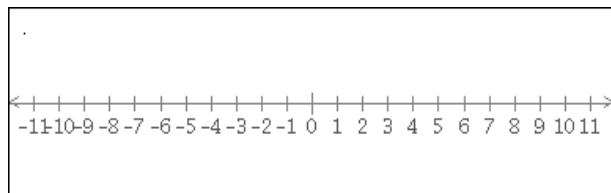


Function?:
Yes No

51. What is the value of $\sqrt{25}$?

52. Graph the inequality below on the number line.

$$x \geq -3$$



53. The sets L and J are given below.

$$L = \{ -1, 1, 5, 6 \}$$

$$J = \{ -2, 0, 1, 3, 5 \}$$

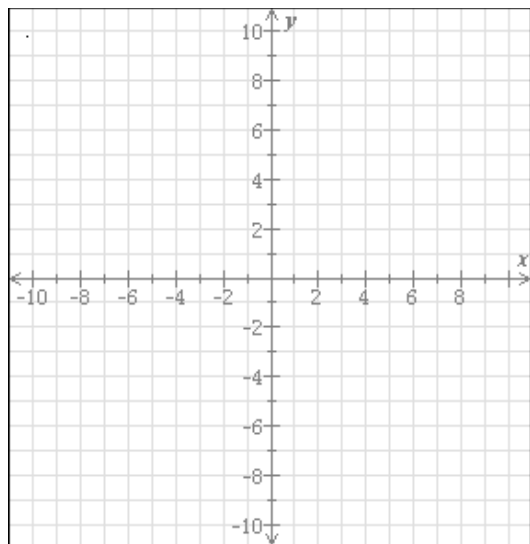
Find the intersection of L and J

Find the union of L and J

Write your answers using set notation.

54. Graph the line.

$$y = -\frac{4}{3}x + 8$$



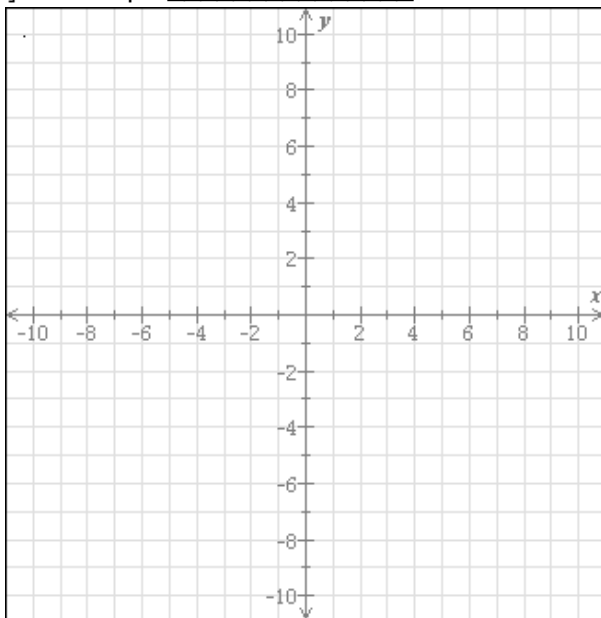
55. The equation of a line is given below.

$$4x + 5y = 20$$

Find the slope and the y -intercept.
Then use them to graph the line.

slope: _____

y -intercept: _____



56. Solve for v

$$7v = 91$$

Simplify your answer as much as possible.

57. Solve for w

$$|w| + 7 = 15$$

58. A wire is first bent into the shape of a square. Each side of the square is 8 in long. Then the wire is unbent and reshaped into a rectangle. If the length of the rectangle is 13 in what is its width?

59. Use substitution to solve the system.

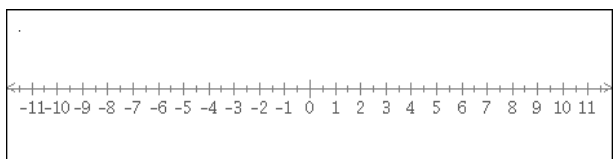
$$\begin{aligned}y &= 3x - 5 \\ 2x - 5y &= 12\end{aligned}$$

$$x = \boxed{}$$

$$y = \boxed{}$$

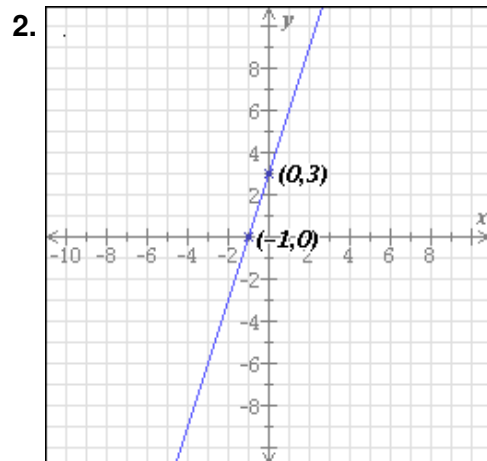
60. Graph the solution to the inequality on the number line.

$$|u - 2| \geq 7$$



101 Mock Final #2 Answers for class Beginning and Intermediate Algebra Combined / MATH 101 - Fall 2014 – 504

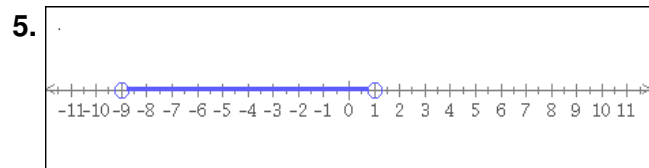
1. $42v + 28y - 35$



3. (a) 44%

(b) 60%

4. $w = -131$

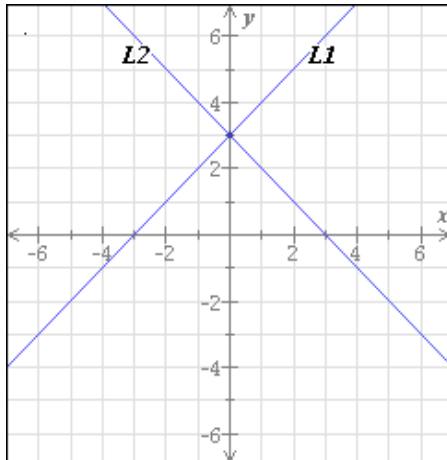


6. x-intercept: $-\frac{10}{9}$

y-intercept: $\frac{5}{4}$

7. L1: $y = x + 3$

L2: $y = -x + 3$



This system of equations is:

- consistent independent

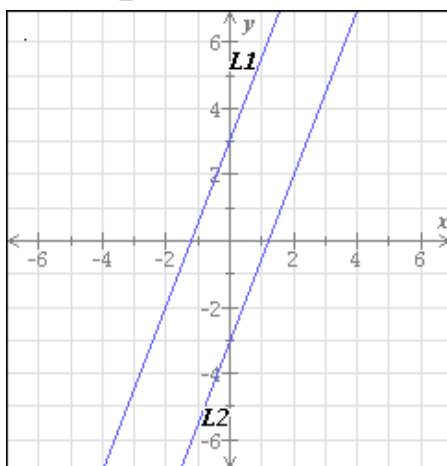
This means the system has:

- a unique solution:

Solution: $(0, 3)$

L1: $y = \frac{5}{2}x + 3$

L2: $y = \frac{5}{2}x - 3$



This system of equations is:

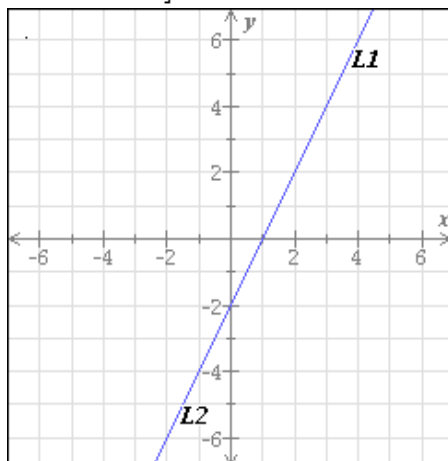
- inconsistent

This means the system has:

- no solution

$$L1: y = 2x - 2$$

$$L2: -2x + y = -2$$



This system of equations is:

- consistent dependent

This means the system has:

- infinitely many solutions

8. $-16y + 8u + 12$

9. $(-5)^3 = -125$
 $(-8)^2 = 64$

10. 16.6 hours

11. $x \geq -\frac{44}{31}$

12. 81 tickets

13. 207 miles

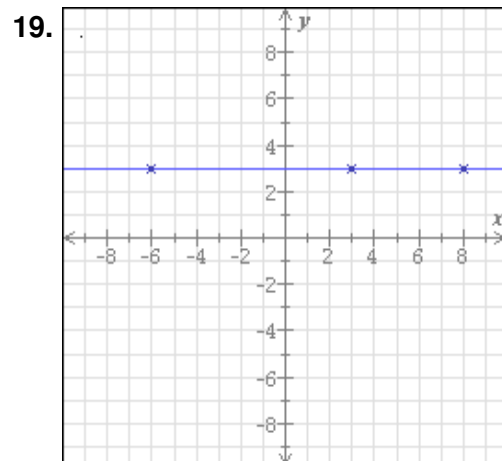
14. $-\frac{3}{2}$

15. First city: \$5750
 Second city: \$7250

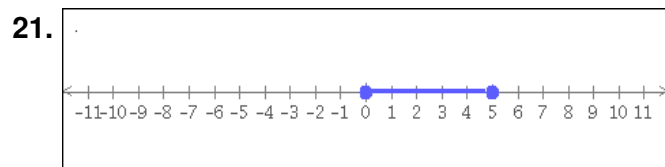
16. $2x^2 - 5x - 6$

17. $m \geq 1418$

18. $x = -2$
 $y = -1$



20. $-\frac{3}{2}$



22. 0.3

23. $w = 7, -7$

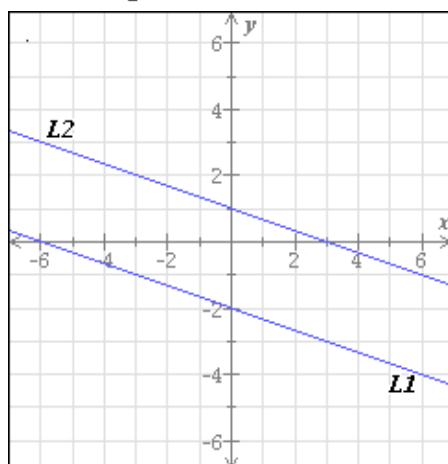
24. $x = 8, -8$

25. $2u - 6 = -14$

26. $y = -\frac{2}{5}x + 4$

27. L1: $y = \frac{-1}{3}x - 2$

L2: $y = \frac{-1}{3}x + 1$



This system of equations is:

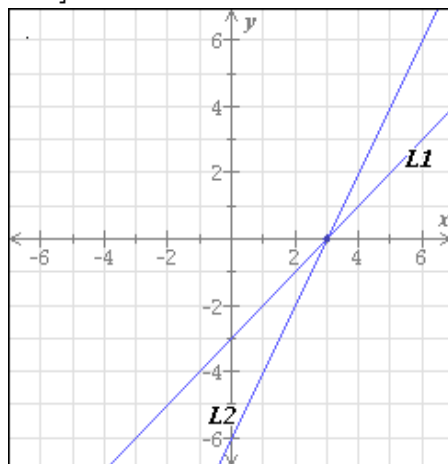
- inconsistent

This means the system has:

- no solution

L1: $y = x - 3$

L2: $y = 2x - 6$



This system of equations is:

- consistent independent

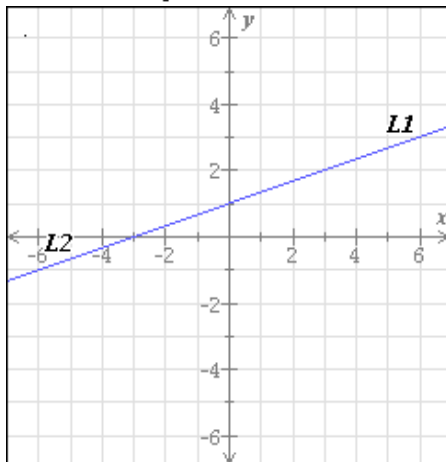
This means the system has:

- a unique solution:

Solution: $(3, 0)$

$$L1: y = \frac{1}{3}x + 1$$

$$L2: -x + 3y = 3$$



This system of equations is:

- consistent dependent

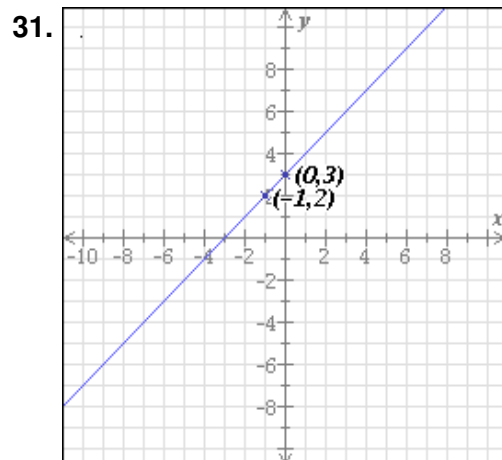
This means the system has:

- infinitely many solutions

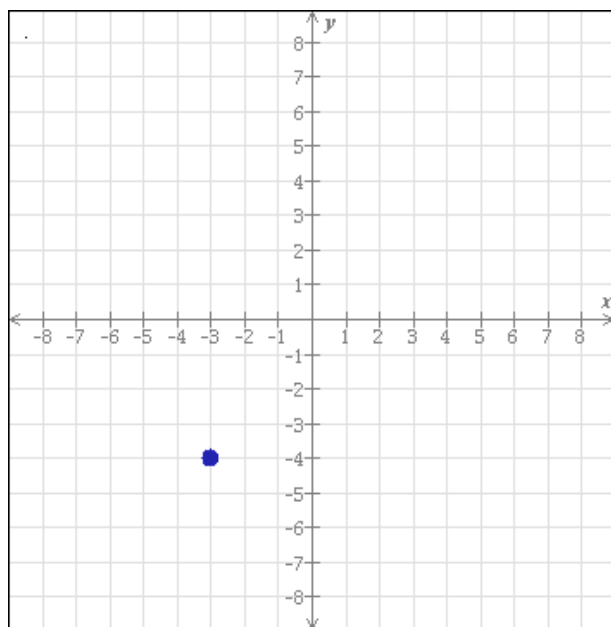
28. 25

29. $\frac{31}{18}$ or $1\frac{13}{18}$

30. $70 = 22 + c$



32.



33. $y = 12.1$

34. $u = -5$

35. domain = $[-3, 5)$
range = $[-5, 4)$

36. 18 minutes

37. One possible answer is $(x, y) = (6, 0)$

38. $-5 \times (-7) = 35$

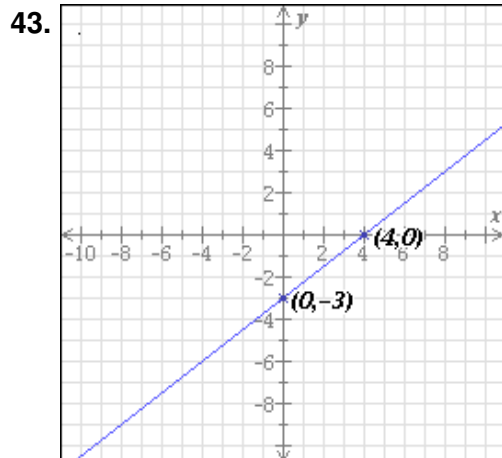
$$-54 \div 9 = -6$$

39. $7w - 5 = 2$

40. $v = 36.7$

41. One possible answer is $(x, y) = (0, -5)$

42. Desktop: \$2900
Laptop: \$2450



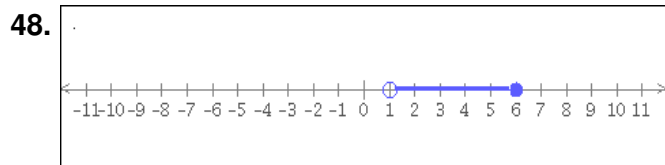
44. $x = -3$
 $y = 5$

45. Slope of a parallel line: $-\frac{8}{7}$

Slope of a perpendicular line: $\frac{7}{8}$

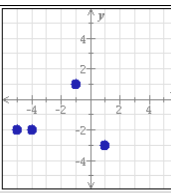
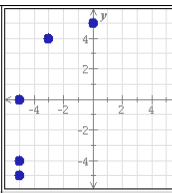
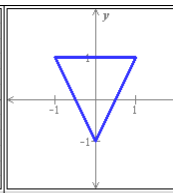
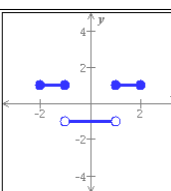
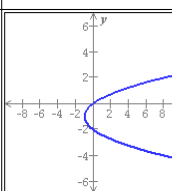
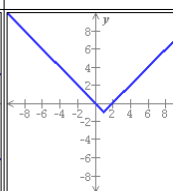
46. \$37.66

47. $y = x - 3$



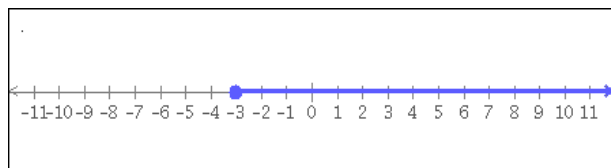
49. 22.4

50.

		
Function? <input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Yes <input checked="" type="radio"/> No
		
Function? <input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Yes <input checked="" type="radio"/> No

51. 5

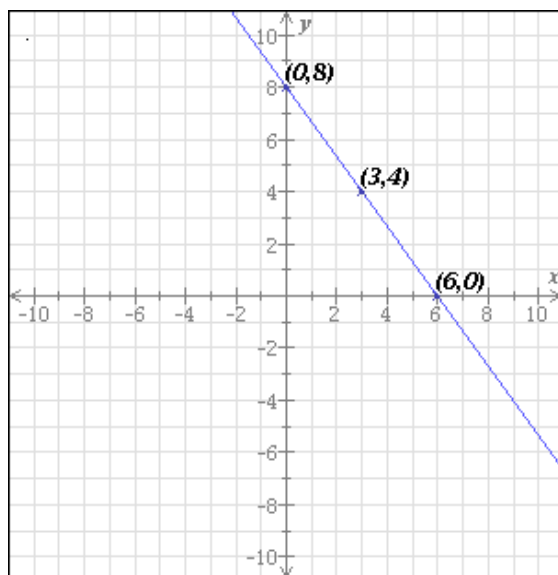
52.



53. $L \cap J = \{ 1, 5 \}$

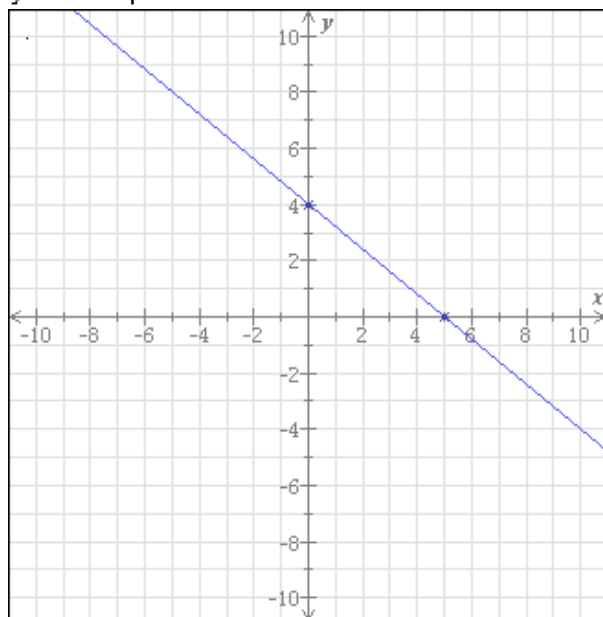
$L \cup J = \{ -2, -1, 0, 1, 3, 5, 6 \}$

54.



55. slope: $-\frac{4}{5}$

y-intercept: 4



56. $v = 13$

57. $w = 8, -8$

58. 3 in

59. $x = 1$
 $y = -2$

