

Name: _____ Date: _____

Algebra 1B: Summer Packet

This assignment is intended to review Algebra 1A skills that will be necessary in Algebra 1B. You are expected to know the content in this assignment. During the first week of school, your teacher will inform you how this packet will be used as a first marking period assignment.

Solve each equation and check your work.

1. $9 + \frac{n}{5} = 19$

2. $-10x - 4 = -30$

3. $-\frac{y}{2} + 14 = -1$
 $= 9.8$

4. $0.25x + 0.1x$

5. $26.54 - x = \frac{1}{2}(50 - x)$

6. $2(1.5x + 4) = -1$

7. $x - 4x = 2x + 1 - 5x$

8. $\frac{3}{5}x - \frac{1}{10}x = \frac{1}{2}x + 1$

9. $5x - 2(x + 2) = -(2x + 15)$

10. $6x + 14 = -7 - x$

Solve. Show your work.

11. A jet leaves the Charlotte, North Carolina, airport traveling at an average rate of 564 km/h. Another jet leaves the airport one half hour later traveling at 744 km/h in the same direction. Use an equation to find how long the second jet will take to over take the first.

	<u>Rate</u>	<u>Time</u>	<u>Distance</u>

12. An airplane flies from New Orleans, Louisiana, to Atlanta, Georgia, at an average rate of 320 miles per hour. The airplane then returns at an average rate of 280 miles per hour. The total travel time is 3 hours. What is the flying time from New Orleans to Atlanta?

	<u>Rate</u>	<u>Time</u>	<u>Distance</u>

13. Two bicyclists ride in opposite directions. The speed of the first bicyclist is 5 miles per hour faster than the second. After 2 hours they are 70 miles apart. Find their rates.

	<u>Rate</u>	<u>Time</u>	<u>Distance</u>

14. A moving van leaves a house traveling at an average rate of 40 mi/h. The family leaves the house $\frac{1}{2}$ hour later following the same route in a car. They travel at an average rate of 60 mi/h. How long will it take the car to catch up with the van?

	<u>Rate</u>	<u>Time</u>	<u>Distance</u>

15. Two jets leave Dallas at the same time and fly in opposite directions. One is flying west 50 mi/h faster than the other. After 2 hours, the jets are 2500 miles apart. Find the speed of each jet.

	<u>Rate</u>	<u>Time</u>	<u>Distance</u>

16. Suppose you hike up a hill at 4 km/h. You hike back down at 6 km/h. Your hiking trip took 3 hours. How much time did it take you to hike up the hill.

	<u>Rate</u>	<u>Time</u>	<u>Distance</u>

17. An airplane left an airport flying at 180 mi/h. A jet that flies at 330 mi/h left 1 hour later. The jet follows the same route as the airplane at a different altitude. How many hours will it take the jet to catch up with the airplane?

	<u>Rate</u>	<u>Time</u>	<u>Distance</u>

18. The sum of three consecutive integers is 915. What are the integers?

19. The sum of two consecutive odd integers is 56. What are the integers?

20. The sum of two consecutive even integers is 118. What are the integers?

21. Three friends were born in consecutive years. The sum of their birth years is 5982. Find the year in which each person was born.

Solve and GRAPH each inequality.

22. $-\frac{2}{3}x < -4$

23. $7.5 + y \geq 13$

24. $-2 < 9 + 3 + w$
 $\leq x - 3.4$

25. -7.7

26. $6 < -9x$

27. $-\frac{1}{5}x \geq -34$

$$28. \quad \frac{x}{-6} > -23$$

+ x)

$$29. \quad 5x + 4(x - 1) \geq x + 5(2$$

$$30. \quad 4(3x - 1) \leq 2(x + 3)$$

$$31. \quad \frac{1}{2}x - \frac{1}{8} \geq \frac{3}{4} + \frac{5}{6}x$$

$$32. \quad 5y + 7 > -3 \text{ or } 3y - 2 \geq 13$$

$$33. \quad -2 \leq \frac{5-x}{3} \leq 2$$

$$34. \quad 2d + 5 \leq -1 \text{ or } -2d + 5 \leq 5$$

$$35. \quad -1 < 4x + 7 \leq 11$$

Solve equations and inequalities for absolute value.

$$36. \quad -2 |x - 4| = -8$$

$$37. \quad 4 |x| = 32$$

$$38. \quad 4 - 3 |x + 2| > -14$$

$$39. \quad 3 |x + 5| > 15$$

$$40. \quad \frac{1}{2} |x + 6| > 8 \\ | \leq 5$$

$$41. \quad |3x + 1|$$

$$42. \quad |x| - \frac{2}{3} = \frac{5}{6}$$

$$43. \quad -3 |x - 3| = 9$$

Write an equation of the direct variation that includes the given points.

$$44. \quad (3, -4)$$

$$45. \quad (-3.4, 7.6)$$

$$46. \quad (5.2, -1.5)$$

$$47. \quad \left(-\frac{8}{3}, -\frac{9}{8}\right)$$

Write an equation of the inverse variation that includes the given points.

48. (2.2, 3.4)

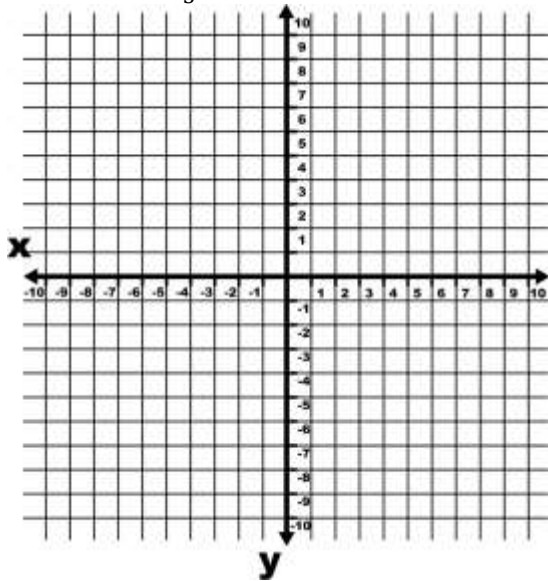
49. (-3.5, -9.2)

50. $(-\frac{15}{6}, \frac{5}{9})$

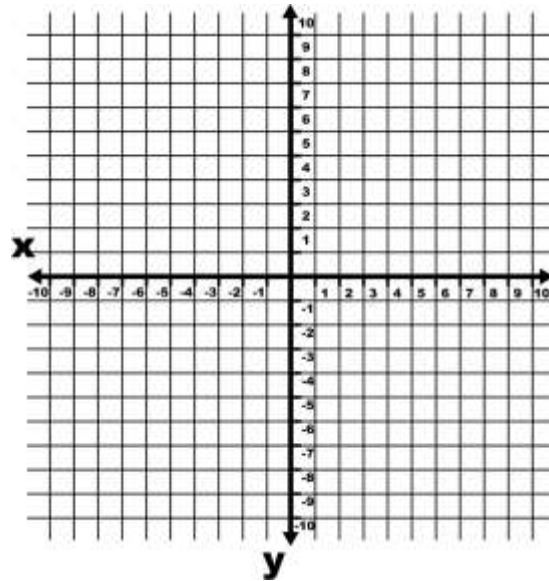
51. (-35, 92)

Graph each line.

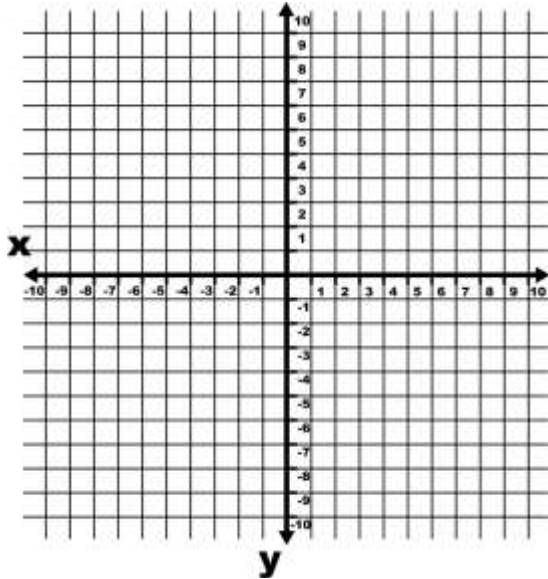
52. $y = -\frac{4}{5}x - 9$



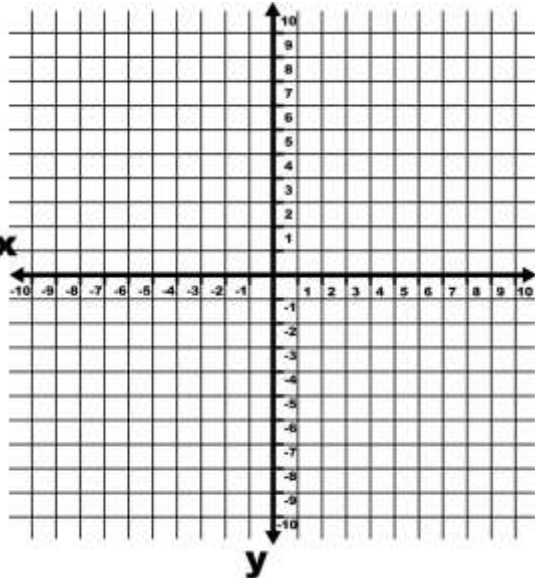
53. $-7x + 8y = -24$



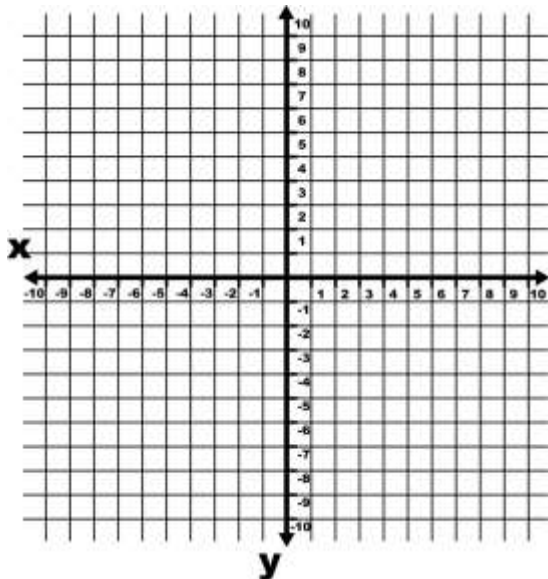
54. $y = -5x + 2$



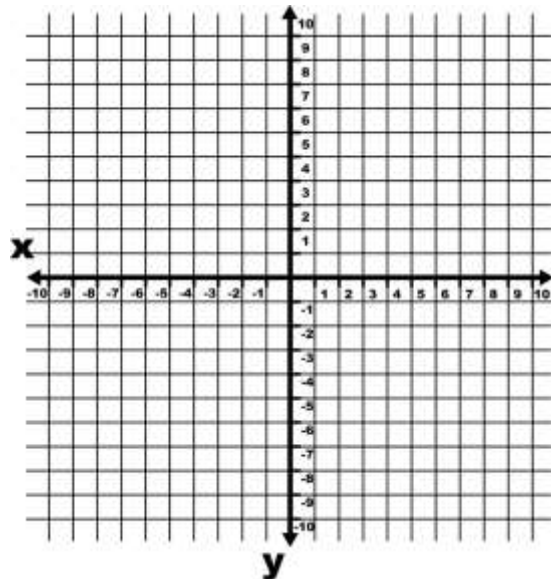
55. $-8x + 10y = 40$



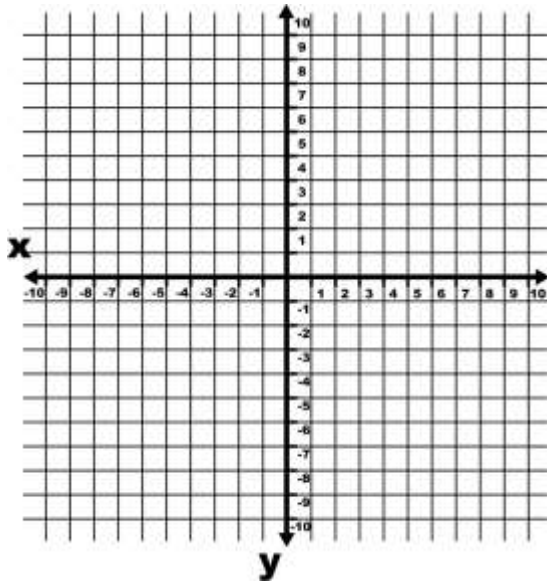
56. $7x - 2y = 4$



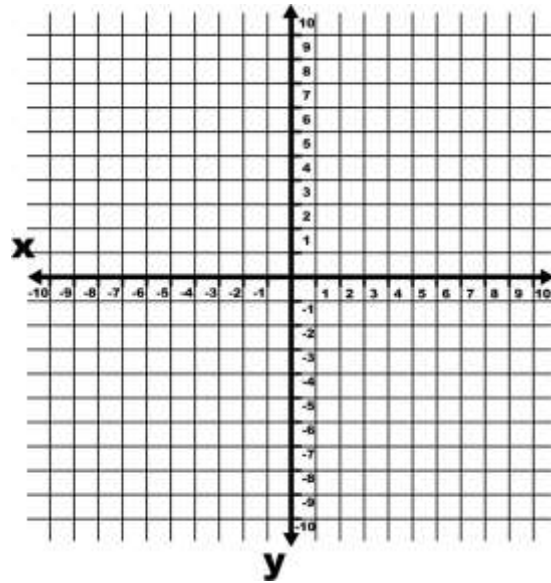
57. $y - 4 = -9(x + 2)$



58. $y = -\frac{4}{3}x - 2$



59. $y + 3 = \frac{3}{4}(x - 2)$



Write an equation for line that is PERPENDICULAR and PARALLEL to the given line and that passes through the given point.

60. $3x + 5y = 7$; $(-1, -2)$

61. $4x - 2y = 9$; $(8, -2)$