

A1.1.2.1

Write, solve, and/or graph linear equations using various methods.

31. Erica went shopping for new clothes for school. She bought a pair of jeans for \$70.19 and several shirts for \$8.63 each. If x represents the number of shirts she bought, which of the following equations should be used to find y , the total cost of Erica's shopping trip?

A.) $x = \$8.63y + \70.19

C.) $y = \$8.63x + \70.19

B.) $y = \$70.19x + \8.63

D.) $x = \$70.19y + \8.63

32. LeAnne leaves town traveling at an average speed of 49 mph. After 4 hours, Bart leaves town traveling in the same direction at an average speed of 67 mph. Which of the following equations could be used to represent the distance between LeAnne and Bart after x hours?

(Let x represent the time in hours that Bart has been traveling and y represent the distance between LeAnne and Bart.)

A.) $y = 18x$

C.) $y = 196 - 67x$

B.) $y = 196 + 18x$

D.) $y = 196 - 18x$

33. A company has fixed operating costs of \$2,137.00 per month with a production cost of \$15.15 per unit. If each unit brings \$33.09 in revenue, which of the following equations represents the profit for the month?

(Let x represent the number of units made per month and y represent the total profit for the month.)

A.) $y = 48.24x - 2,137$

C.) $y = 33.09x - 2,137$

B.) $y = 15.15x - 2,137$

D.) $y = 17.94x - 2,137$

34. Ann is moving from Houston to McKinney and rented a truck from U-Move truck rentals. The cost of a one-day truck rental is given by

$$C(m) = 0.5m + 50,$$

where m is the number of miles driven. If Ann drives 280 miles, what is the cost of the truck rental?

A.) \$195

C.) \$218

B.) \$190

D.) \$140

35. Solve for x : $7(2x - 8) = 77x$

A.) $x = \frac{19}{2}$

C.) $x = -\frac{8}{9}$

B.) $x = \frac{218}{9}$

D.) $x = \frac{218}{2}$

36. Juan scored 24 points in the first half of the basketball game, and he scored p points in the second half of the game. Write an expression to determine the number of points he scored in all. Then, find the number of points he scored in all if he scored 11 points in the second half of the game.

A.) $24 + p$; 35 points

C.) $24p$; 35 points

B.) $24 - p$; 13 points

D.) $\frac{24}{p}$; 13 points

37. Write the equation that describes the line with slope = 2 and y -intercept = $\frac{3}{2}$ in slope-intercept form.

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

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

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

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

38. Write the equation that describes the line in slope-intercept form.
slope = 4, point (3, -2) is on the line

A.) $y = 4x + 14$

C.) $y = 4x + 10$

B.) $y = 4x - 14$

D.) $y = 4x - 2$

39. The water level of a river is 34 feet and it is receding at a rate of 0.5 foot per day. Write an equation that represents the water level, w , after d days. In how many days will the water level be 26 feet?

A.) $w = 34d - 0.5$ In 120 days, the water level will be 26 feet.

B.) $w = -0.5d + 34$ In 16 days, the water level will be 26 feet.

C.) $w = 34d + 0.5$ In 16 days, the water level will be 26 feet.

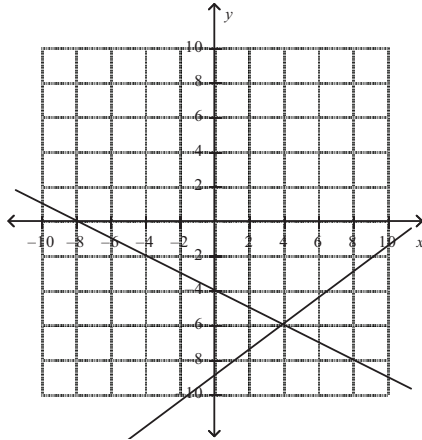
D.) $w = -0.5d - 34$ In 120 days, the water level will be 26 feet.

A1.1.2.2

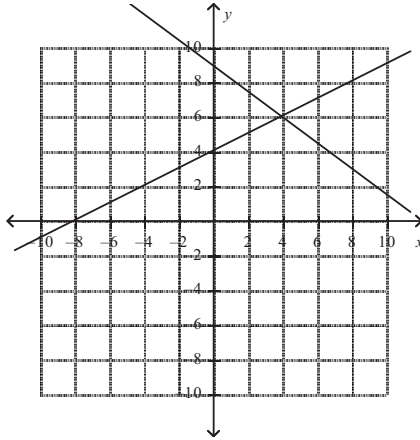
Write, solve, and/or graph systems of linear equations using various methods.

40. Solve the system $\begin{cases} 3x + 4y = -36 \\ -2x + 4y = -16 \end{cases}$ by graphing.

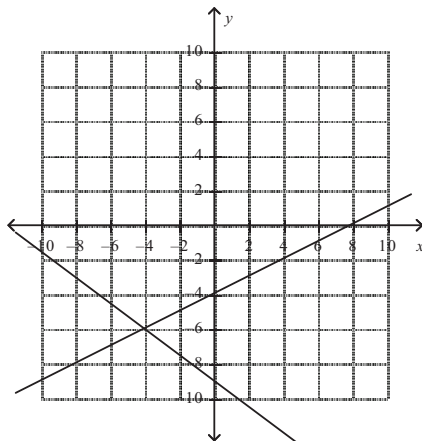
A.) $(4, -6)$



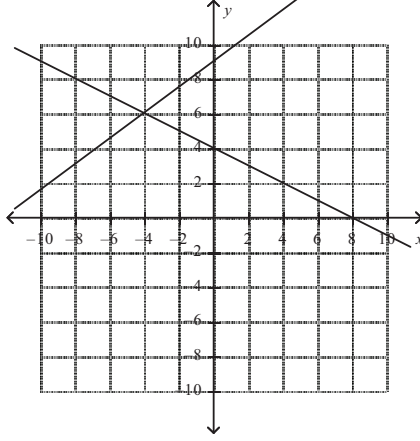
C.) $(4, 6)$



B.) $(-4, -6)$



D.) $(-4, 6)$



41. Solve $\begin{cases} 4x - 4y = -16 \\ x - 2y = -12 \end{cases}$ by using substitution. Express as an ordered pair.

A.) $(8, -4)$

C.) $(-2, 4)$

B.) $(4, -8)$

D.) $(4, 8)$

42. Solve $\begin{cases} 3x - 6y = 12 \\ 2x + 6y = -12 \end{cases}$ by using elimination. Express as an ordered pair.

- A.) $(-2, -3)$ C.) $(0, -2)$
 B.) $(-2, 0)$ D.) $(-8, -6)$

43. The Fun Guys game rental store charges a fee of \$5 plus \$5.50 per game rented. The Game Bank charges a fee of \$17 plus \$2.50 per game. For how many game rentals will the cost be the same at both stores? What is that cost?

- A.) 3 games; \$22 C.) 4 games; \$27
 B.) 2 games; \$16 D.) 6 games; \$38

44. Janice is going on vacation and needs to leave her dog at a kennel. Nguyen's Kennel charges \$15 per day plus \$20 for a processing fee. The Pup Palace Kennel charges \$12 per day, and has a \$35 processing fee. After how many days is the Pup Palace Kennel cheaper than Nguyen's Kennel?

- A.) The Pup Palace Kennel is always cheaper than Nguyen's Kennel.
 B.) The Pup Palace Kennel is never cheaper than Nguyen's Kennel.
 C.) The Pup Palace Kennel is cheaper than Nguyen's Kennel after 15 days.
 D.) The Pup Palace Kennel is cheaper than Nguyen's Kennel after 5 days.

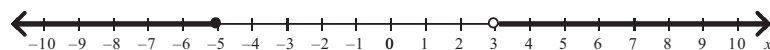
45. At the local pet store, zebra fish cost \$2.10 each and neon tetras cost \$1.85 each. If Marsha bought 13 fish for a total cost of \$25.80, not including tax, how many of each type of fish did she buy?

- A.) 7 zebra fish, 6 neon tetras C.) 6 zebra fish, 7 neon tetras
 B.) 8 zebra fish, 5 neon tetras D.) 5 zebra fish, 8 neon tetras

A1.1.3.1

Write, solve, and/or graph linear inequalities using various methods.

46. Write the compound inequality shown by the graph.



- A.) $x \leq -5$ AND $x > 3$ C.) $x \leq -5$ OR $x > 3$
 B.) $x \leq 3$ AND $x > -5$ D.) $x < -5$ OR $x > 3$

47. Solve and graph the solutions of the compound inequality: $1 < 3x - 2 \leq 10$.

A.) $1 < x$ AND $x < 4$



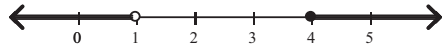
B.) $1 \leq x$ AND $x \leq 4$



C.) $1 < x$ AND $x \leq 4$

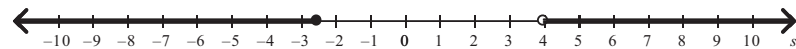


D.) $1 > x$ AND $x \geq 4$

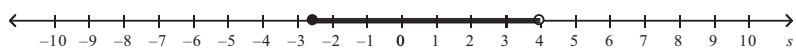


48. Solve and graph the compound inequality: $s + 4 < 1.5$ OR $3 + s \geq 7$

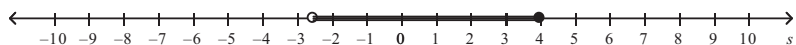
A.) $s < -2.5$ OR $s \geq 4$



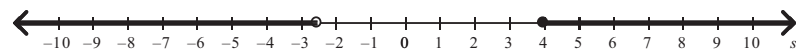
B.) $s < -2.5$ OR $s < 4$



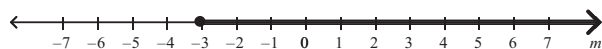
C.) $s < -2.5$ OR $s < 4$



D.) $s < -2.5$ OR $s \geq 4$



49. Write the inequality shown by the graph.



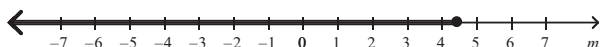
A.) $m \leq -3$

C.) $m \geq -3$

B.) $m > -3$

D.) $m < -3$

50. Write the inequality shown by the graph.



A.) $m < 4.5$

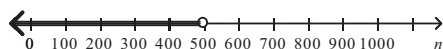
C.) $m > 4.5$

B.) $m \leq 4.5$

D.) $m \geq 4.5$

51. To join the school swim team, swimmers must be able to swim at least 500 yards without stopping. Let n represent the number of yards a swimmer can swim without stopping. Write an inequality describing which values of n will result in a swimmer making the team. Graph the solution.

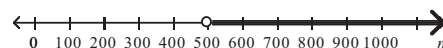
A.) $n < 500$



B.) $n \leq 500$



C.) $n > 500$



D.) $n \geq 500$



52. Denise has \$365 in her saving account. She wants to save at least \$635. Write and solve an inequality to determine how much more money Denise must save to reach her goal. Let d represent the amount of money in dollars Denise must save to reach her goal.

A.) $365 + d \geq 635; d \geq 270$

C.) $365 + d \geq 635; d > 635$

B.) $365 + d = 635; d = 270$

D.) $365 + d > 635; d > 270$

53. Marco's Drama class is performing a play. He wants to buy as many tickets as he can afford. If tickets cost \$2.50 each and he has \$14.75 to spend, how many tickets can he buy?

A.) 0 tickets

C.) 6 tickets

B.) 5 tickets

D.) 4 tickets

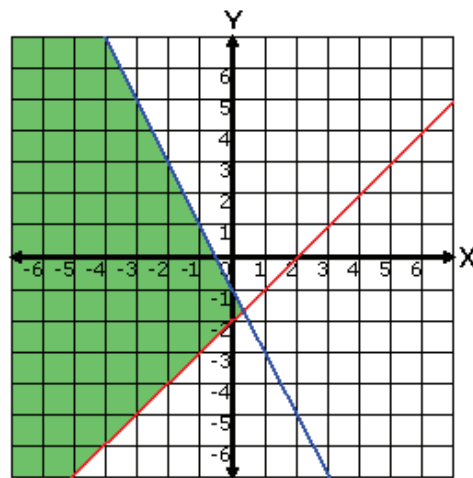
54. Mrs. Williams is deciding between two field trips for her class. The Science Center charges \$135 plus \$3 per student. The Dino Discovery Museum simply charges \$6 per student. For how many students will the Science Center charge less than the Dino Discovery Museum?

- | | |
|---------------------------|----------------------------|
| A.) 132 or more students | C.) More than 45 students |
| B.) 132 or fewer students | D.) Fewer than 45 students |

A1.1.3.2

Write, solve, and/or graph systems of linear inequalities using various methods.

55. Choose the system of inequalities that best matches the graph below.

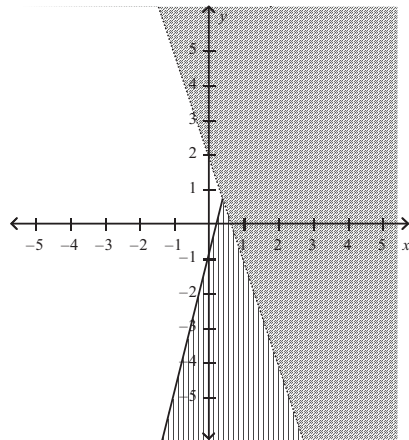
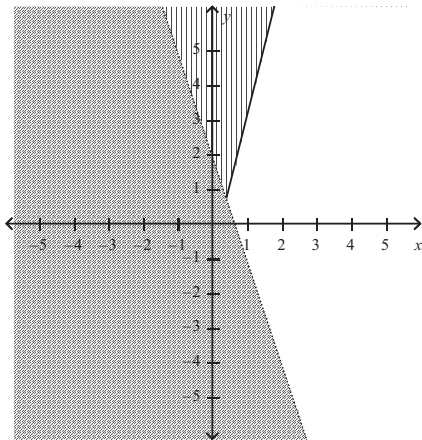


- | | |
|--|------------------------------------|
| A.) $y \geq x - 2$
$y \leq -2x - 1$ | C.) $y < -2x$
$y \leq x + 2$ |
| B.) $y \geq -x + 2$
$y < 2x - 1$ | D.) $y \leq 2x + 2$
$y \geq -x$ |

56. Graph the system of linear inequalities $\begin{cases} y < -3x + 2 \\ y \geq 4x - 1 \end{cases}$. Give two ordered pairs that are solutions and two that are not solutions.

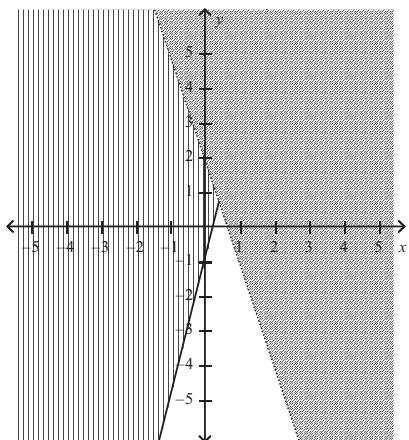
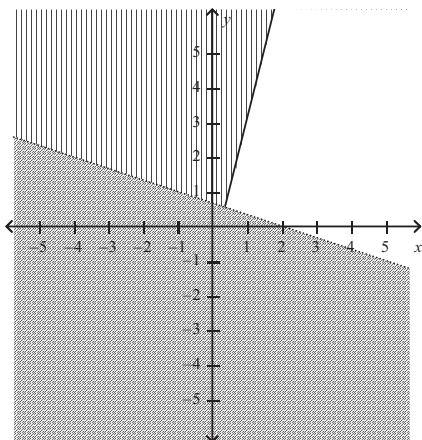
A.) (0, 0) and (-4, -5) are solutions.
(2, 2) and (10, 1) are not solutions.

C.) (2, 2) and (0, 10) are solutions.
(0, 0) and (-5, -1) are not solutions.

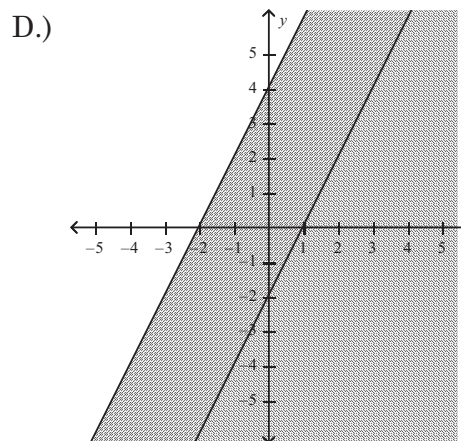
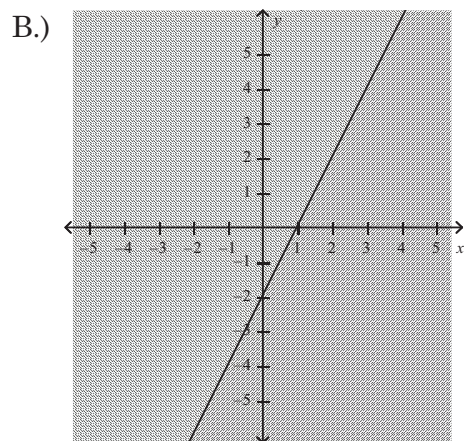
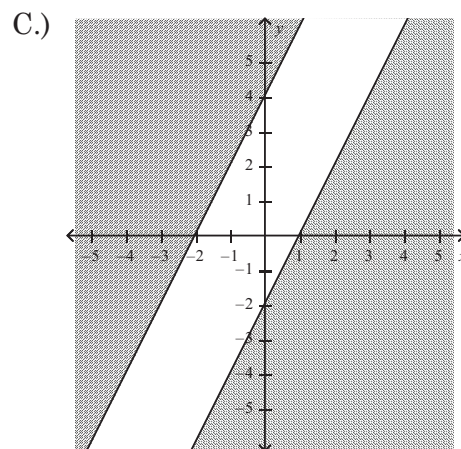
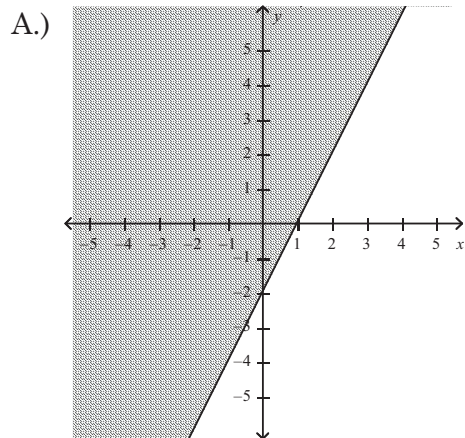


B.) (5, -6) and (0, 0) are solutions.
(1, 1) and (2, 0) are not solutions.

D.) (1, -2) and (-6, 0) are solutions.
(1, 5) and (0, 0) are not solutions.

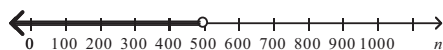


57. Graph the system of linear inequalities $\begin{cases} y \geq 2x + 4 \\ y \leq 2x - 2 \end{cases}$.



58. To join the school swim team, swimmers must be able to swim at least 500 yards without stopping. Let n represent the number of yards a swimmer can swim without stopping. Write an inequality describing which values of n will result in a swimmer making the team. Graph the solution.

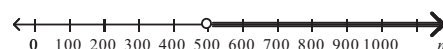
A.) $n < 500$



B.) $n \leq 500$



C.) $n > 500$

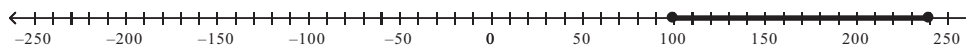


D.) $n \geq 500$

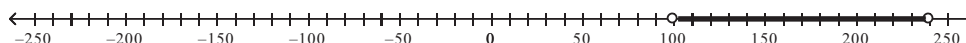


59. Fly with Us owns a D.C.10 airplane that has seats for 240 people. The company flies this airplane only if there are at least 100 people on the plane. Write a compound inequality to show the possible number of people in a flight on a D.C.10 with Fly with Us. Let n represent the possible number of people in the flight. Graph the solutions.

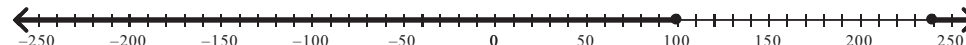
A.) $100 \leq n \leq 240$



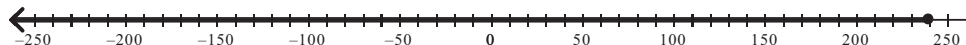
B.) $100 < n < 240$



C.) $100 \geq n \geq 240$

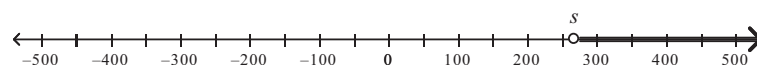


D.) $n \leq 240$

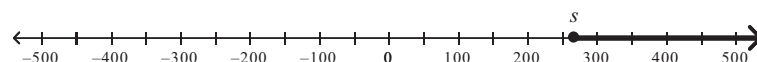


60. Sam earned \$450 during winter vacation. He needs to save \$180 for a camping trip over spring break. He can spend the remainder of the money on music. Write an inequality to show how much he can spend on music. Then, graph the inequality.

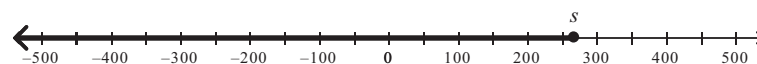
A.) $450 + s > 180$; $s > 270$



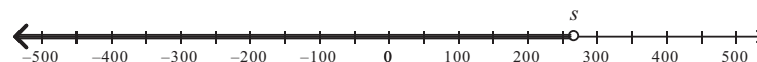
B.) $180 + s \geq 450$; $s \geq 270$



C.) $180 + s \leq 450$; $s \leq 270$



D.) $450 + s < 180$; $s < 270$



A1.2.1.1

Analyze and/or use patterns or relations.

61. Find the 20th term in the arithmetic sequence $-4, 1, 6, 11, 16, \dots$

A.) 95

C.) 96

B.) 72

D.) 91