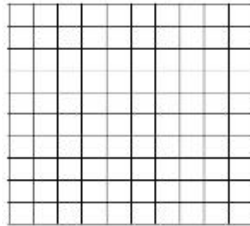
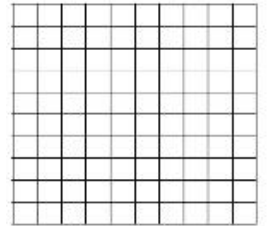


Solve the systems of equations algebraically and by graphing.

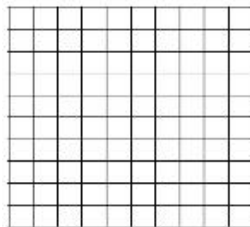
1.
$$\begin{cases} -7x + 4y = 24 \\ 4x - 4y = 0 \end{cases}$$



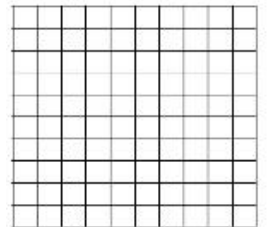
3.
$$\begin{cases} -2x - 2y = 10 \\ 4x - y = 20 \end{cases}$$



2.
$$\begin{cases} -16x + 7y = 30 \\ 8x - 6y = -20 \end{cases}$$



4.
$$\begin{cases} -8x - 10y = 24 \\ 6x + 5y = 2 \end{cases}$$

Write the **slope-intercept equation** of each line.

5.
$$y + 5 = \frac{3}{4}(x - 8)$$

6.
$$3y - 2x = \frac{1}{2}(2x - 4)$$

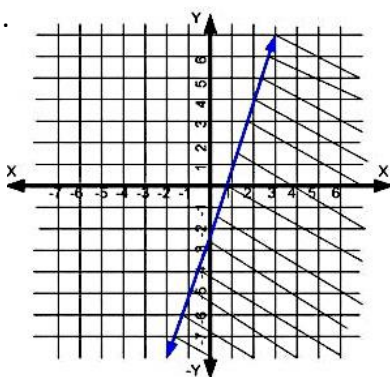
7. Find an equation for the line that passes through the point $(4, -6)$ and is perpendicular to $y = \frac{1}{4}x + 3$ 8. Find an equation for the line that passes through $(-1, 2)$ and is parallel to $y = 2x - 3$.Find the **slope, and y- and x-intercepts** of the following equations.

9.
$$-4y + 2x = 10$$

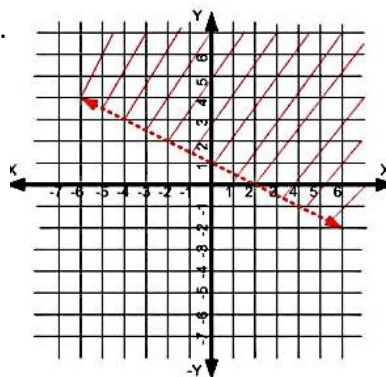
10.
$$3x + 5(y + 1) = 15$$

Write the following linear inequality shown in the graph.

11..



12..



13. Translate the following sentence into an equation. *Twice a number then increase by eight totals three times the number decreased by six.*

a. What is the number?

14. You want to purchase a 20 pound flamingo from Hawaii. Shipping is \$130 and another \$0.10 per mile. Write an equation to show the total cost of shipping the flamingo.

a. If Saratoga Springs is 3,000 miles away Hawaii, what would it cost to ship it to your house?

b. What if the shipping is at least \$130 and another \$0.10 per mile. Write an inequality.

15. The Band Club is selling tickets to the upcoming band concert. They pre-sold student tickets at \$4 each and adult tickets at \$5 each. If they made \$343, write an equation to represent the number of adult and student tickets sold.

a. If there were 22 pre-sold student tickets sold, what would be the number of adult tickets sold?

b. What if they made no more than \$343? Write an inequality.

16. Keith has \$500 in a savings account at the beginning of the summer. He withdraws \$25 each week for food, clothes and movie tickets that cost \$7 each.

a. Write an equation to represent the situation.

b. What if he wants to withdraw less than \$25 each week. Write an inequality.

c. If he will be gone for 7 weeks, what is the possible solutions of money he will have in his account?

17. Oceanside Bike Rental Shop charges 13 dollars plus 8 dollars an hour for renting a bike.

a. Define your variables.

b. Write the equation.

c. Dan paid \$53 to rent a bike, how many hours did he pay to have the bike checked out?

Solve the following for the given variable. List with the lowest integer radicand if necessary. (No decimals.)

18. Solve for x : $-5t + 2 - 3x = 2(t + 7)$

25. $\frac{4}{p+6} = \frac{6}{s}$

26. $\frac{5}{2} = \frac{x-2}{6}$

19. Solve for a : $5 - (2 + 3a) = 5a + 4(b + 2)$

27. $\frac{b+3}{b-9} = \frac{3}{6}$

20. Solve for x : $ax^2 + by = c$

28. $2|2p - 1| + 4 = 20$

29. $\frac{1}{3}|m + 4| - 6 = 30$

21. Solve for x : $-x^2 + 2 = 8 - 2(x^2 - 6)$

30. Given the equation $2|2p - 1| + r = 20$, what value of r will yield no solution?

22. Solve for x : $y = mx + b$

31. $20 - s^2 = 2(s^2 + 50)$

23. Solve for n : $2(2n^2 - 1) > -(3m + 3) + 5n^2$

32. $2(5 - s^3) = 3s^3 - 42$

24. Solve for d : $-\frac{1}{2}(d + 1) \geq 2m + \frac{1}{2}$

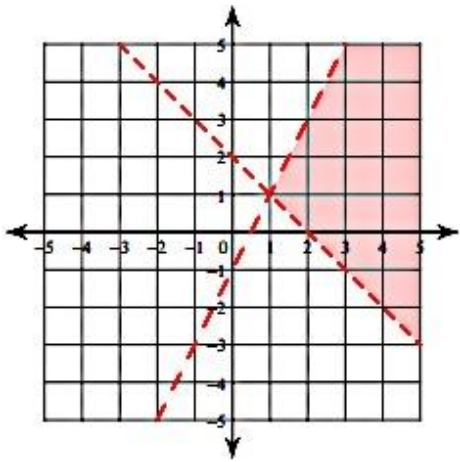
33. The surface area of a cube is 144 in^2 . What is the side length of the cube?

34. 343 tickets were sold to the school play. 85 more student tickets than adult tickets were sold. Write a system of equations and find how many tickets of each type were sold?

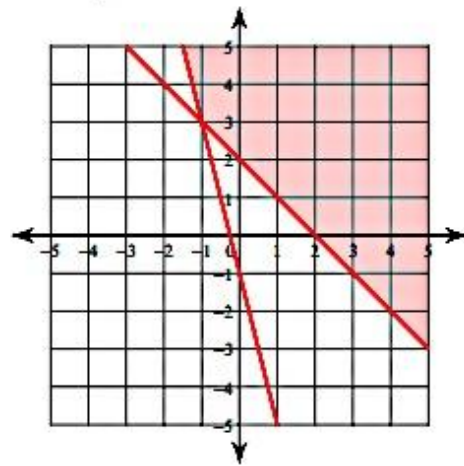
35. On Friday, Music Land sold CD's at \$25 each and cassette tapes at \$18 each. Receipts for the day totaled \$441. On Saturday the store priced both items at \$20, sold the exactly the same number of each item, and had receipts of \$420. Write a system of equations and find how many CD's and cassette tapes are sold each day?

Write the system of inequality for the following graphs.

36.



30.



Use the graph in the bottom right corner to find the region(s) that would be the solution set for the given systems of inequalities. List a test point that would show your solution set.

31. $x + 2y \leq 0$

$-x + y \leq 1$

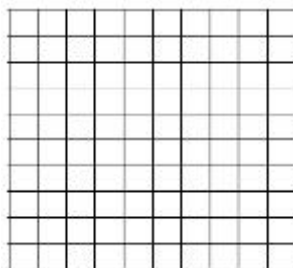
32. $-x + y \leq 1$

$3x - y < 3$

33. What region would be a solution for all four inequalities?

Graph the given systems.

34. $\begin{cases} 2(x - 3y) \leq 24 \\ 4(x + 4) - 5y < 40 \end{cases}$



35. $\begin{cases} 3x + 3y < 9 \\ x > 4 \\ y \geq 2x + 6 \end{cases}$

