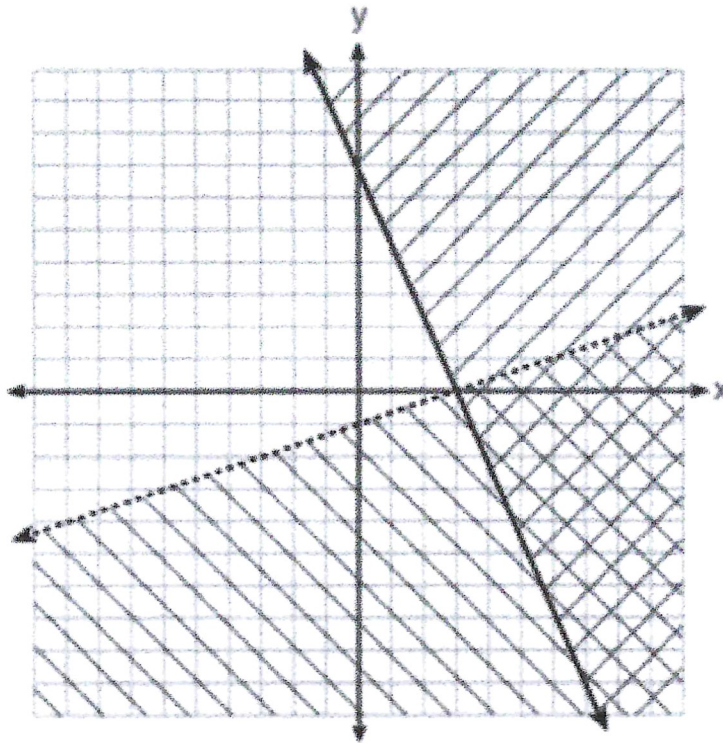


- (i) The drama club is running a lemonade stand to raise money for its new production. A local grocery store donated cans of lemonade and bottles of water. Cans of lemonade sell for \$2 each and bottles of water sell for \$1.50 each. The club needs to raise at least \$500 to cover the cost of renting costumes. The students can accept a maximum of 360 cans and bottles.

Write a system of inequalities that can be used to represent this situation.

The club sells 144 cans of lemonade. What is the *least* number of bottles of water that must be sold to cover the cost of renting costumes? Justify your answer.

2 Given the graph below:



a) Write the two inequalities represented by the graph above.

Then, answer the following true for false questions using the graph of inequalities above.

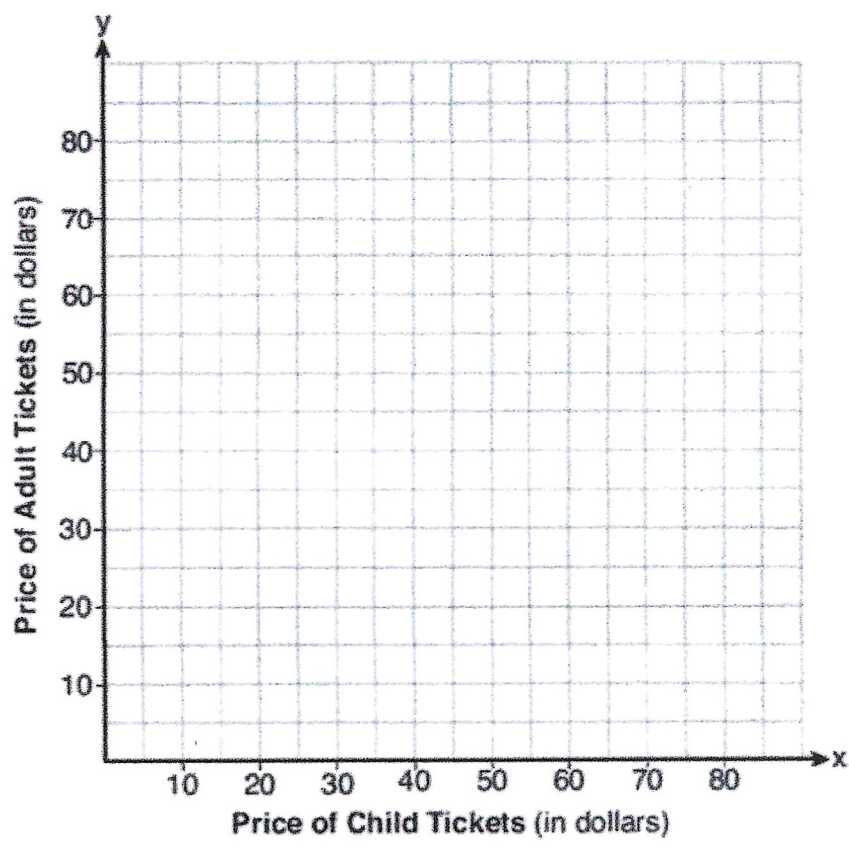
The point  $(6, -7)$  is in the solution set:            True            or            False

If you chose false, explain why:

The point  $(3, 0)$  is in the solution set:            True            or            False

If you chose false, explain why:

3 Two families went to Rollercoaster World. The Brown family paid \$170 for 3 children and 2 adults. The Peckham family paid \$360 for 4 children and 6 adults. If  $x$  is the price of a child's ticket in dollars and  $y$  is the price of an adult's ticket in dollars, write a system of equations that models this situation. Graph your system of equations on the set of axes below

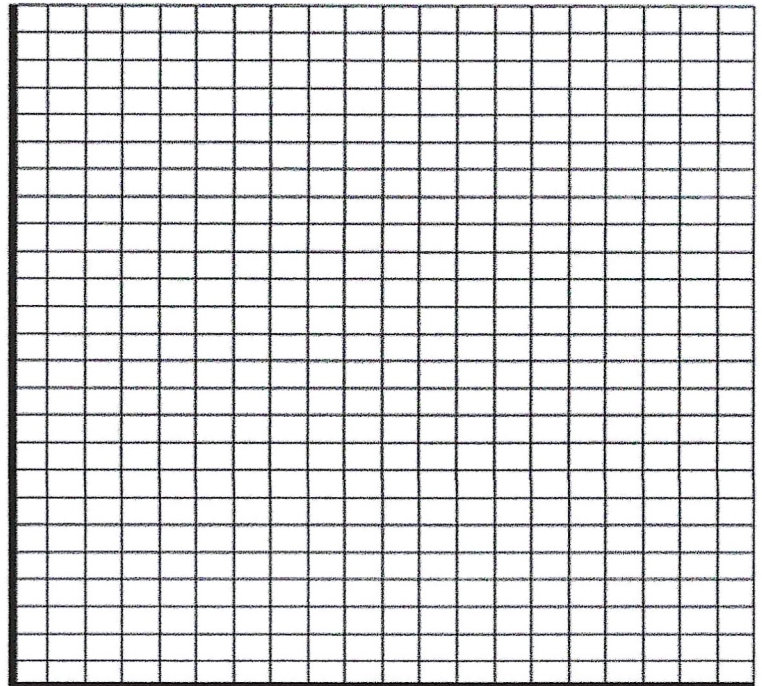


- a. Show if the point  $(40, 25)$  is the solution to the system of equations.
  
- b. State the solution and explain your reasoning.
  
- c. Explain what each coordinate of the point of intersection means in the context of the problem.

④ Tommy needs to earn at least \$120 per week working as both a manager at a grocery store and teaching basketball lessons. He earns \$10 per hour at the store and \$15 per hour teaching basketball lessons. He can work no more than 20 hours per week due to his busy schedule. Let  $g$  represent the hours working at the grocery store and  $b$  represent the hours teaching basketball lessons.

Write a system of linear inequalities to model the situation.

Then graph the system on the provided grid.



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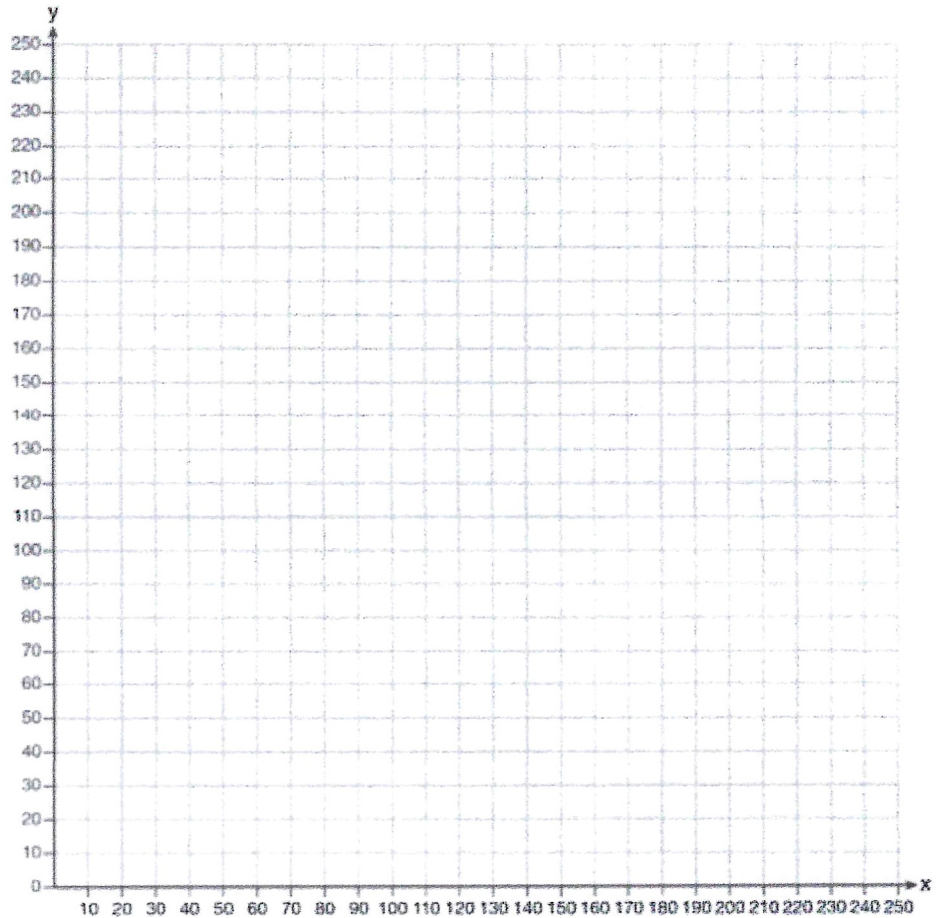
Identify and interpret a solution of the system, in the context of the problem.

Use your graph of inequalities to determine whether you can work 8 hours at the grocery store and teach 1 hour of basketball lessons.



5. It's opening night for Fantastic Flicks Theater. The theater can hold a maximum of 180 people. Adult tickets cost \$12.75, and child tickets cost \$8.50. The theater's goal is to sell at least \$1870 worth of tickets. Write a system of linear inequalities that can be used to find the possible combinations of adult tickets,  $x$ , and child tickets,  $y$ , that would satisfy the theater's goal.

Graph the solution to this system of inequalities on the set of axes below. Label the solution with an S.



Identify and interpret a solution of the system, in the context of the problem.

Use your graph of inequalities to determine whether the theater can sell 100 adult tickets and 50 children tickets in order to reach their goal.