

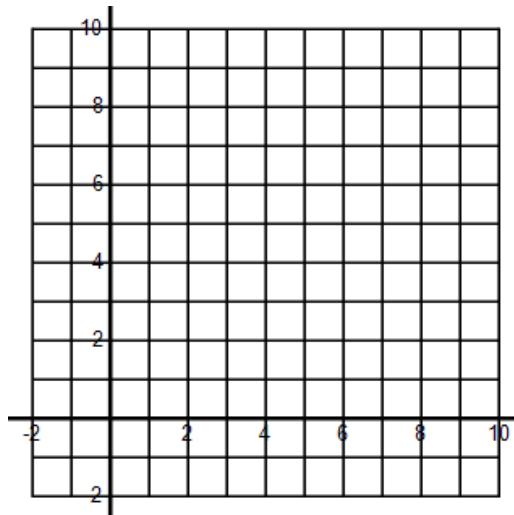
**Unit 4 Day 8 - Graphing Inequalities with Two Variables Classwork**

**You are at the sandwich store. Subs sell for \$5 each. Chips cost \$2 per bag.**

1. If you have \$15, what could you buy? List all the possible combinations.

2. Define some variables, then write a rule that would describe the total cost of buying chips and subs with your \$15.

3. Label the axes appropriately, then graph all the possible combinations of chips and subs that you could buy with \$15.



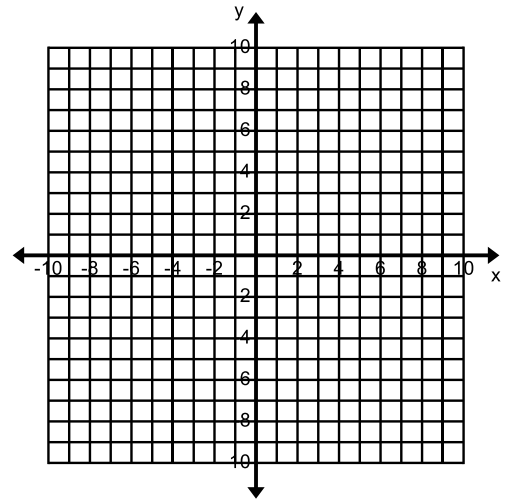
4. Write some observations about your graph, table, and rule:

5. List at least 10 possible combinations of  $x$  and  $y$  that would make this inequality true:  $2x + y \leq 4$

6. Plot all of the combinations from #5 as points  $(x, y)$  on this graph:

7. Graph the line  $y = -2x + 4$  on the graph also:

8. What do you notice about the relationship between the points from #5 and the line from #7?



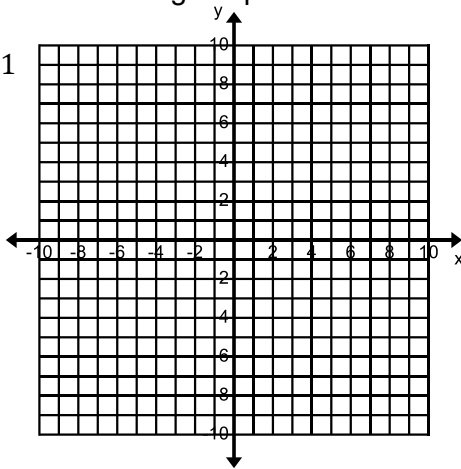
9. What is the relationship between the rule  $2x + y \leq 4$  and the equation of the line  $y = -2x + 4$  ?

10. When is the boundary line solid?

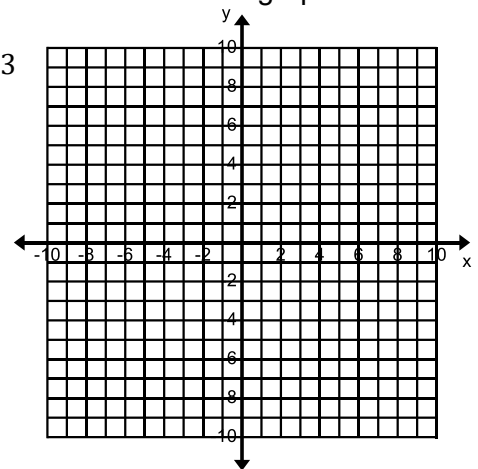
When is the boundary line dotted?

Graph each of the following inequalities. Don't forget to shade the correct section of the graph.

11.  $y < x - 1$

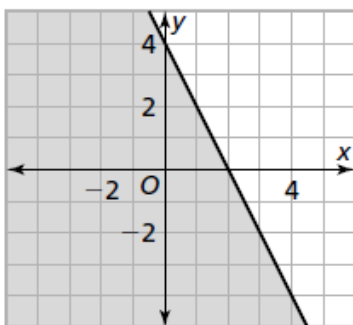


12.  $y \geq -\frac{1}{2}x + 3$



For each of the following graphs, write the inequality that has been graphed.

13.



14.

