

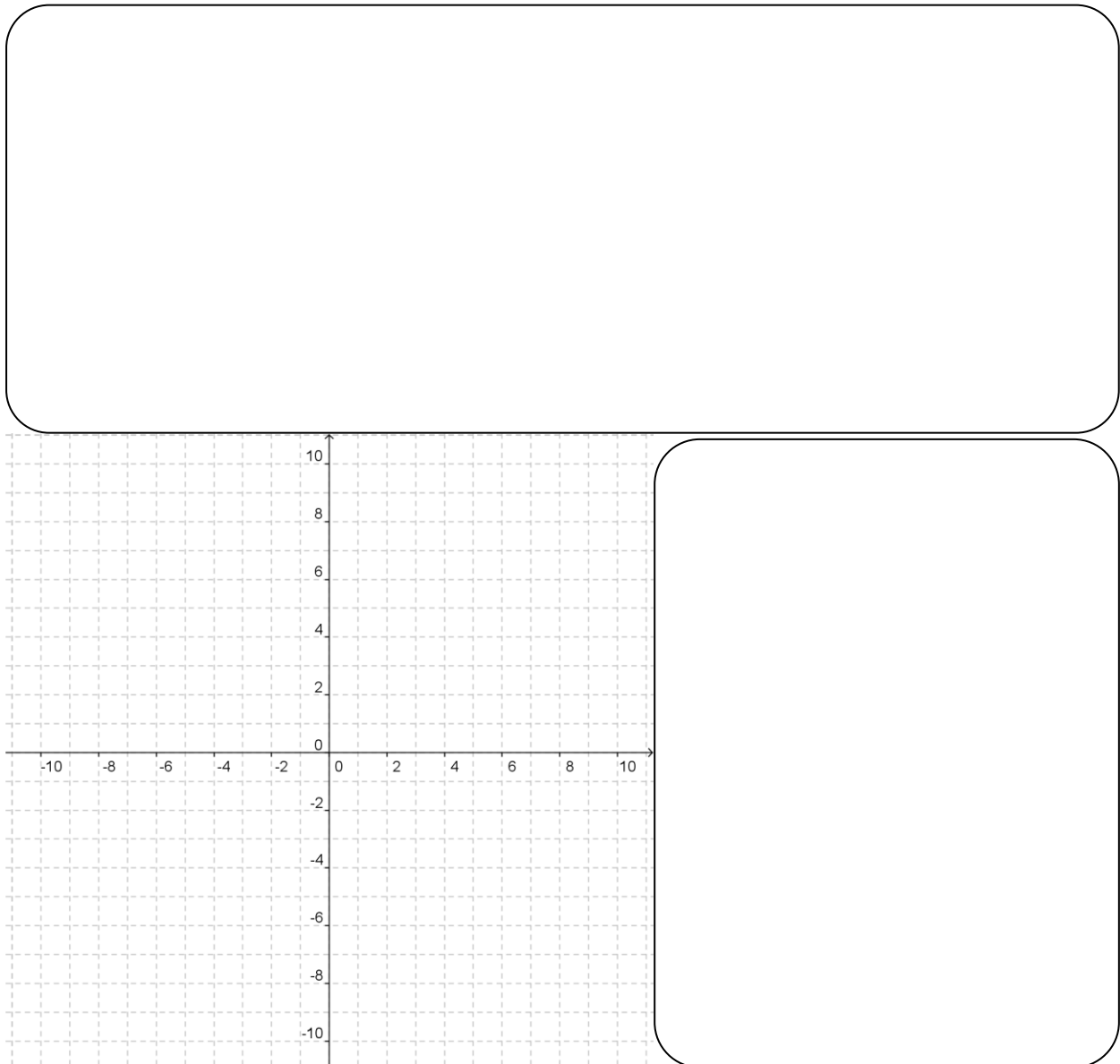
Linear Inequalities | Assignment

Name:	
Date:	I am on a mac computer ☐
My Achievement Goal for this chapter is... (Circle one) A+ A B C D	
(Teacher only) This assignment....	
Is Good to go ☐	Needs Corrections:

Make sure that you show all of your work!

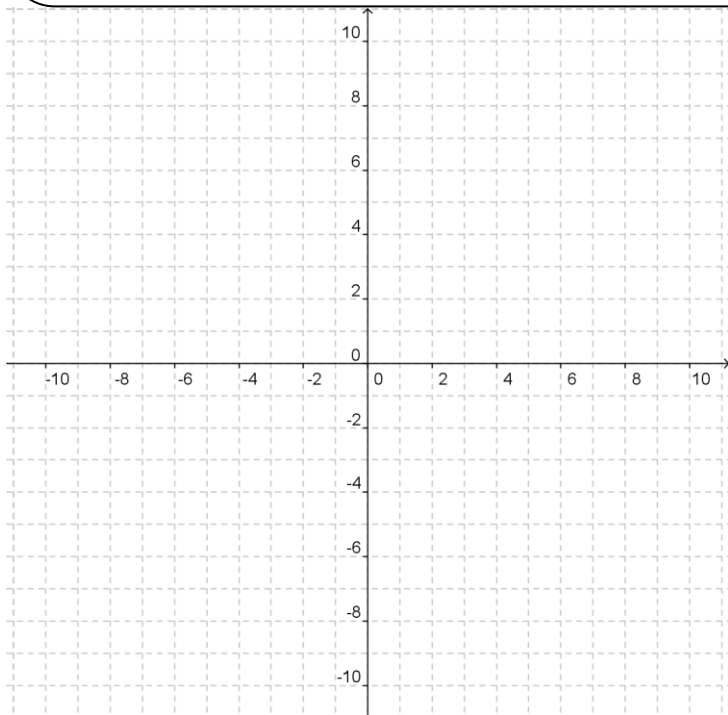
1. Graph the following systems of linear inequalities, and find the intersection of the boundary lines:

a. $-8y + x \geq 14$
 $-24y - x < 18$



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b. $-3y + 9x \leq -15$
 $-9y - 3x \leq 15$



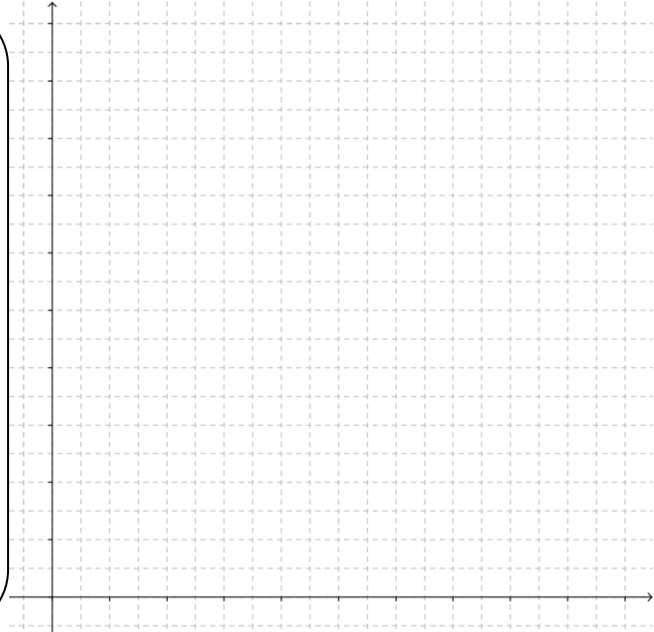
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2. A personal trainer wants to maximize the amount of calories burned in a 15 minute workout. There are two exercise machines available, a bike and an elliptical. Using the bike burns 15 calories/minute and using the elliptical burns 11 calories/minute. The personal trainer wants to spend at least 3 minutes on each machine, and needs time for a 1-minute break between each activity. What combination of exercises will yield the most calories burned?

Variable Definition:

Restrictions:

Objective Function:



A large, empty rounded rectangular box for writing the solution to the problem.

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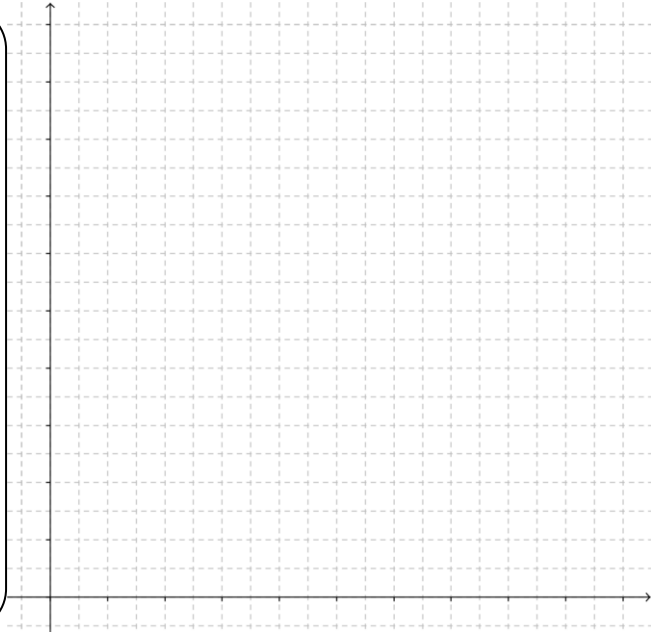
3. The great gold and silver mining company (GGSMC) wants to minimize their purification costs. It costs them \$2027 per tonne of Gold ore, and \$3393 per tonne of Silver ore to get it ready to sell. The shareholders have demanded that the mine take in revenues of at least \$133,000 per day. Purified gold ore sells for of \$10,000 per tonne, and silver \$7,000. Also, the foreman has noted that the mine needs to produce at least 16 tonnes of ore per day to keep the mine running efficiently. State the question that comes to mind, and use linear programming to solve it.

Question:

Variable Definition:

Restrictions:

Objective Function:



A large empty rectangular box with rounded corners, intended for the student to write their solution to the linear programming problem.

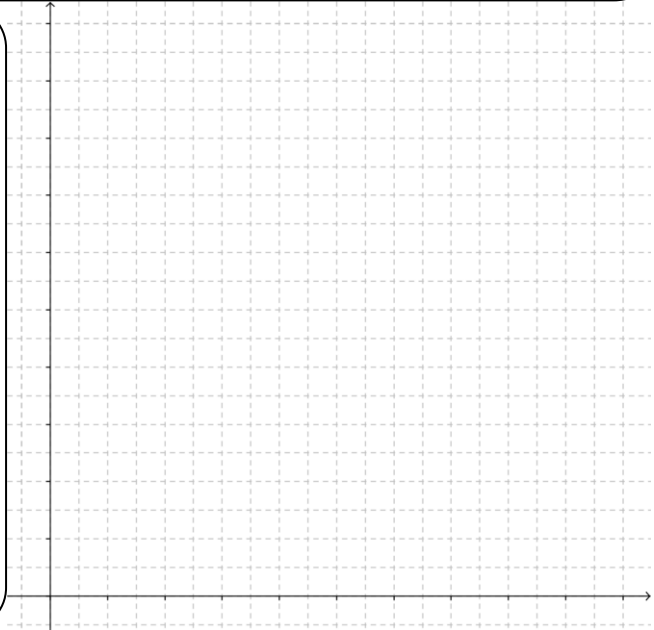
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4. Write your own linear programming question. Be creative. Then solve it below and answer the questions:

Variable Definition:

Restrictions:

Objective Function:



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a. Is it discrete or continuous? Why?



b. Is it bounded or unbounded? What does this mean?



c. How could you change the objective function to get a different solution?

