## Activity 1.1.6 Meera's Jobs

Solve the following problem using the linear programming procedure.

Meera is a high school student who is going to work two jobs this summer. She will work as a painter for one job and will mow lawns for the second job. She will work a total of at most 24 hours a week at both jobs. For her first job, painting, she has found that she needs 1.5 hours of preparation time for every hour he works. For her second job, mowing lawns, she needs 0.5 hours of preparation time for every hour she works. She is not paid for preparation time so she does not count this time in her hours of work. She wants her total preparation time to be at most 18 hours per week. If Meera makes 12 dollars an hour painting and 9 dollars an hour mowing lawns, what is the best combination of hours of painting and mowing (she wants to make the most money) for her to schedule each week?

1. Identify the variables for this problem.

2. Write four inequalities that constrain the problem.

3. Graph the inequality constraints on the coordinate plane below. Label and scale the axes. Identify and shade in the feasible region.
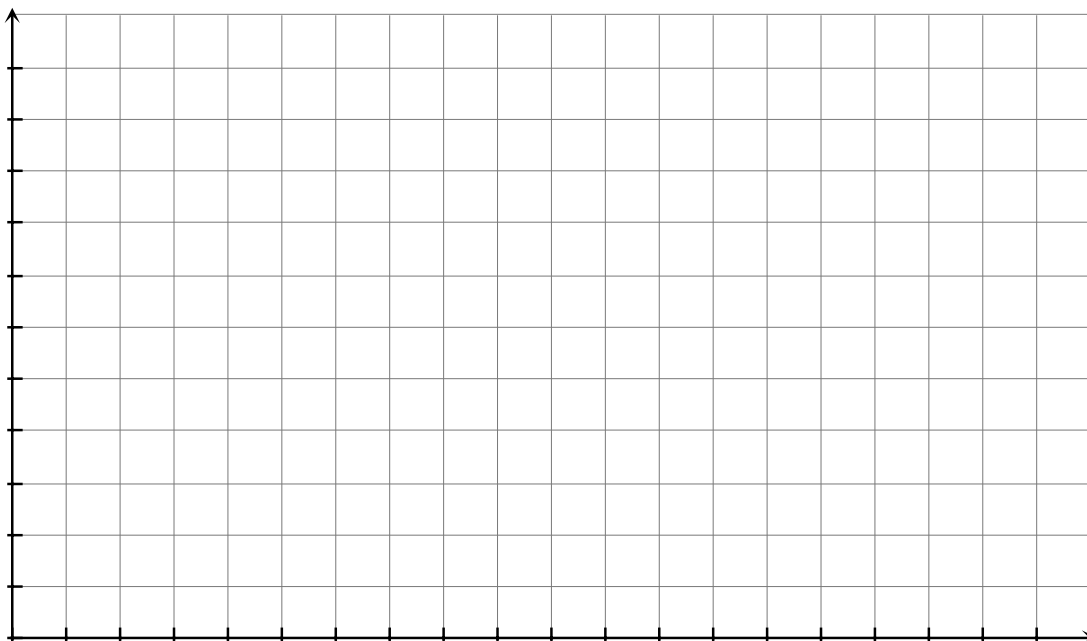
4. Find the coordinates of the corner points of the feasible region. Reminder: You will need to solve some systems of equations using the equations of the constraint lines.

5. Write the objective function.

6. Enter the corner points in the table below and find the objective function value for each corner point. Identify the corner point that maximizes the objective function.

x	*y*	*Objective Function Value*

7. State the solution and verify that it makes sense. Summarize your result in a statement using a complete sentence.