The feasible region determined by a system of constraints is given. Find the minimum and maximum values of the objective function for the given feasible region.

1. \( C = x - y \)
2. \( C = x + 2y \)
3. \( C = -2x + y \)
4. \( C = x + 3y \)
5. \( C = 3x + 4y \)
6. \( C = 3x + 5y \)

Find the minimum and maximum values of the objective function subject to the given constraints.

7. Objective function: \( C = 2x + y \)
   Constraints: 
   \( x \geq 0 \)
   \( y \geq 0 \)
   \( x + y \leq 4 \)

8. Objective function: \( C = x + y \)
   Constraints: 
   \( x \geq 0 \)
   \( x \leq 3 \)
   \( y \geq 0 \)
   \( y \leq 5 \)

9. Objective function: \( C = x - y \)
   Constraints: 
   \( x \leq 0 \)
   \( y \leq 4 \)
   \( x + y \geq -1 \)

**Breakfast Bars** In Exercises 10–13, use the following information.
Your factory makes fruit filled breakfast bars and granola bars. For each case of breakfast bars, you make $40 profit. For each case of granola bars, you make $55 profit. The table below shows the number of machine hours and labor hours needed to produce one case of each type of snack bar. It also shows the maximum number of hours available.

<table>
<thead>
<tr>
<th>Production Hours</th>
<th>Breakfast bars</th>
<th>Granola bars</th>
<th>Maximum hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine hours</td>
<td>2</td>
<td>6</td>
<td>150</td>
</tr>
<tr>
<td>Labor Hours</td>
<td>5</td>
<td>4</td>
<td>155</td>
</tr>
</tbody>
</table>

10. Write an equation that represents the profit (objective function).
11. Write a system of inequalities that represents the constraints.
12. Sketch the graph of the constraints found in Exercise 11 and label the vertices.
13. How many cases of each product should you make to maximize profit?