Short Wheels

Short Wheels is a small home business that designs and builds skateboards. Its employees glue sheets of maple veneer together to build the boards and include wheel sets when selling the boards. Model A uses 10 sheets of maple veneer and is packaged with two wheel sets. Model B uses 12 sheets of maple veneer and is packaged with four wheel sets. Short Wheels has 140 sheets of maple veneer and 40 wheel sets available. Let \( x \) represent the number of Model A skateboards and let \( y \) represent the number of Model B skateboards.

1. Write an inequality to represent the amount of maple veneer used to make both models.

2. Write an inequality to represent the number of wheel sets needed for both models.

3. Solve both inequalities for \( y \). Write the related equation on the corresponding line in the graph below.

4. Shade the appropriate area of the graph to represent the solutions to the system of inequalities created.

5. Use the graph above to determine whether each point would satisfy the conditions for the situation. Justify your answers.

<table>
<thead>
<tr>
<th>Combination</th>
<th>Solution</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5, 10)</td>
<td></td>
<td></td>
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<tr>
<td>(14, 0)</td>
<td></td>
<td></td>
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<tr>
<td>(5, 7)</td>
<td></td>
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<tr>
<td>(12, 3)</td>
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6. The profit from making one Model A skateboard for Short Wheels is $48 and for Model B it is $65. Of the points in number 5 that satisfy the system of inequalities, which one produces the greatest profit for Short Wheels?