Systems of Linear Equations I

Solve the system of equations using substitution. Check for reasonableness of solutions. Show all work.

1. \[ x = y + 8 \]
   \[ 5x + 3y = 12 \]
2. \[ 2x - 9y = 14 \]
   \[ 6x - y = 42 \]

Solve the system of equations using elimination. Check for reasonableness of solutions. Show all work.

3. \[ 7x + y = 47 \]
   \[ 2x + y = 19 \]
4. \[ 7x + 10y = -13 \]
   \[ 3x - 2y = 7 \]
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Solve the system of equations graphically and show the table to verify solutions.

5. \[ \begin{align*} y &= -x + 4 \\
    y &= x + 8 \end{align*} \]

Graph: (Label the point of solution.)

![Graph of linear equations](image)

Table: (Identify the solution.)

<table>
<thead>
<tr>
<th>x</th>
<th>y₁</th>
<th>y₂</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

6. The equations of 2 lines are shown below.

\[ \begin{align*} x + 2y &= 3 \\
7x - y &= 12 \end{align*} \]

What are the coordinates of the point of intersection?

A. (3, 0)
B. (9, -3)
C. \( \left( 1\frac{2}{3}, \frac{2}{3} \right) \)
D. (3, 3)
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7. Circle the graph that shows the solution to this system of equations.

\[ 2x - y = 0 \]
\[ x - 2y = 6 \]