

1) <sup>10-31-19 Elimination</sup> The sum of two numbers is 10. Their difference is 6. What are the two numbers?

$$\begin{array}{r}
 1x + 1y = 10 \\
 1x - 1y = 6 \\
 \hline
 2x \quad \cancel{-x} = 16 \\
 \frac{\quad}{2} \qquad \frac{\quad}{2} \\
 \boxed{x = 8}
 \end{array}$$

$$6 + (-6) = 0$$

4 = plus

z

$$\begin{array}{r}
 x + y = 10 \\
 8 + y = 10 \\
 -8 \qquad -8 \\
 \boxed{y = 2}
 \end{array}$$

$$\begin{array}{r}
 x - y = 6 \\
 8 - y = 6 \\
 -8 \qquad -8 \\
 \hline
 -y = -2 \\
 \frac{-y}{-1} = \frac{-2}{-1}
 \end{array}$$

$$\begin{array}{l}
 2) \quad 2x + 1y = 7 \\
 (+) \quad 3x - 1y = 3 \\
 \hline
 5x = 10 \\
 \frac{5x}{5} = \frac{10}{5} \\
 \boxed{x = 2}
 \end{array}
 \rightarrow
 \begin{array}{l}
 2(2) + 1y = 7 \\
 4 + y = 7 \\
 -4 \quad -4 \\
 \hline
 y = 3
 \end{array}$$

$(x, y)$   
 $\boxed{(2, 3)}$

$$\begin{array}{l} 3) \quad 2x + 3y = 8 \\ \quad (3x + y = 5) \cdot (-3) \end{array}$$

$$2(1) + 3y = 8$$

$$\begin{array}{r} 2 + 3y = 8 \\ -2 \quad -2 \\ \hline \end{array}$$

$$\begin{array}{r} 3y = 6 \\ \hline 3 \quad 3 \end{array}$$

$$y = 2$$

$$\begin{array}{r} 2x + 3y = 8 \\ -9x - 3y = -15 \\ \hline -7x = -7 \\ \hline -7 \quad -7 \end{array}$$

$$x = 1$$

$$(1, 2)$$

