

Substitution and Elimination Practice Problems

Name: _____

Depending on the problem, one method can be easier.

Try each question by elimination or substitution and CHECK BY GRAPHING

$$\begin{aligned} 1. \quad & x + y = 10 \\ & x - y = 2 \end{aligned}$$

$$\begin{aligned} 2. \quad & x = 5y \\ & 3x - 4y = 11 \end{aligned}$$

$$\begin{aligned} 3. \quad & x - 3y = -13 \\ & -x + 4y = 15 \end{aligned}$$

$$\begin{aligned} 4. \quad & x + 3y = 31 \\ & y = 2x + 1 \end{aligned}$$

$$\begin{aligned} 5. \quad & 4x - 2y = -12 \\ & 2x + 3y = 13 \end{aligned}$$

$$\begin{aligned} 6. \quad & x = 1 - 3y \\ & 4x - 2y = -38 \end{aligned}$$

$$\begin{aligned} 7. \quad & 2x - 3y = 12 \\ & 3x + 4y = 15 \end{aligned}$$

$$\begin{aligned} 8. \quad & 2x = 6 - y \\ & 2y = 16 - 4x \end{aligned}$$

$$\begin{aligned} 9. \quad & 5y + 25x = 105 \\ & -97 = -10y + 18x \end{aligned}$$

$$\begin{aligned} 10. \quad & 19x + 13y = 87 \\ & y = \frac{-1}{7}x - \frac{27}{7} \end{aligned}$$

$$\begin{aligned} 11. \quad & 8x - 15y = -204 \\ & 8x - 7y = -44 \end{aligned}$$

$$\begin{aligned} 12. \quad & y = \frac{1}{2}x + 8 \\ & y = \frac{1}{3}x + 13 \end{aligned}$$

$$\begin{aligned} 13. \quad & 11x - 6y = 494 \\ & x + 7y = -23 \end{aligned}$$

$$\begin{aligned} 14. \quad & 10x - 9y = 47 \\ & 7x + 2y = -75 \end{aligned}$$

$$\begin{aligned} 15. \quad & 6x + y = 50 \\ & 18x + 7y = 86 \end{aligned}$$

$$\begin{aligned} 16. \quad & 5x - 4y = 256 \\ & 7x + 12y = -64 \end{aligned}$$

$$17. \quad \frac{872}{5} = \frac{14}{5}y + 3x$$
$$y = \frac{11}{10}x - \frac{36}{5}$$

$$18. \quad y = 2x$$
$$y = 6x + 8$$

$$19. \quad y = x - 11$$
$$4x + \frac{4}{5}y = 70$$

$$20. \quad -8x + 2y = -48$$
$$6x - 2y = 28$$

Challenge QUESTIONS!

$$\begin{aligned} 21. \quad & -2x + y + 3z = 7 \\ & 6x - y + 8z = -30 \\ & -4x - y - 5z = 13 \end{aligned}$$

$$\begin{aligned} 22. \quad & x - 6y - 2z = -8 \\ & -x + 5y + 3z = 2 \\ & 3x - 2y - 4z = 18 \end{aligned}$$