Name: _____

Solving Linear Systems by Linear Combinations

1) Use elimination to solve each system of equations.

1) $\begin{cases} x + y = 4 \\ x - y = 16 \end{cases}$

2) $\begin{cases} x - 3y = 7 \\ x + 2y = 8 \end{cases}$

3) $\begin{cases} x - 13y = -2 \\ 7y - x = 5 \end{cases}$

4) $\begin{cases} x = 5 - y \\ 6x - 4y = 0 \end{cases}$

5) $\begin{cases} x + 5y = 10 \\ x + y = -6 \end{cases}$

6) $\begin{cases} 2x + y = -2 \\ 2x - y = 4 \end{cases}$

7) $\begin{cases} 4x - 8y = 0 \\ x + 3y = -10 \end{cases}$

8) $\begin{cases} 4x - 16y = 24 \\ 2x + 2y = 12 \end{cases}$

9) $\begin{cases} x + 2y = 4 \\ x + 3y = 6 \end{cases}$

10) $\begin{cases} x - 4y = 5 \\ -5x + 10y = -5 \end{cases}$

11) $\begin{cases} x - 6y = 9 \\ 4x - 8y = 12 \end{cases}$

12) $\begin{cases} x + 4y = 5 \\ x - 2y = -7 \end{cases}$

13) $\begin{cases} x = 6 - y \\ 2x - 8y = 2 \end{cases}$

14) $\begin{cases} 6x + y = -9 \\ 3x - y = 6 \end{cases}$

15) $\begin{cases} x = 13 - y \\ x - y = -3 \end{cases}$

16) $\begin{cases} 4x + 3y = 12 \\ 8x - 4y = -12 \end{cases}$

17) $\begin{cases} x - y = -2 \\ 2x + 2y = 16 \end{cases}$

18) $\begin{cases} x - y = 14 \\ 3x - 6y = 15 \end{cases}$

19) $\begin{cases} x + y = 8 \\ 16 + 3x = y \end{cases}$

20) $\begin{cases} x - 6y = -1 \\ x + 3y = -10 \end{cases}$

21) $\begin{cases} x - y = 9 \\ 4x - 2y = -8 \end{cases}$

22) $\begin{cases} x - 6y = 9 \\ x + 3y = -9 \end{cases}$

23) $\begin{cases} -x - y = 4 \\ x + y = 4 \end{cases}$

24) $\begin{cases} 3x - y = 0 \\ 4x + 2y = 10 \end{cases}$

25) $\begin{cases} -x - y = 4 \\ x + y = -4 \end{cases}$

26) $\begin{cases} x - 8y = 5 \\ -2x + 8y = -2 \end{cases}$

27) $\begin{cases} 15x - y = 4 \\ -6x + y = 5 \end{cases}$

28) $\begin{cases} -7x - y = 6 \\ -3x + y = 4 \end{cases}$

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2) Solve $2x + 3y = 11$ and $2x - 4y = -24$ and hence find the value of 'm' for which $y = mx + 3$.

3) For which values of p does the pair of equations given below has unique solution?

$4x + py + 8 = 0$

$2x + 2y + 2 = 0$

4) For what values of k will the following pair of linear equations have infinitely many solutions?

$kx + 3y - (k - 3) = 0$

$12x + ky - k = 0$

5) Solve the following pairs of simultaneous equations.

1) $\begin{cases} 5a - 2b = 68 \\ 3a + b = 10 \end{cases}$

2) $\begin{cases} 5p - 2q = 9 \\ 2p + 5q = -8 \end{cases}$

3) $\begin{cases} \dfrac{x}{8} - y = -\dfrac{5}{2} \\ 3x + \dfrac{y}{3} = 13 \end{cases}$

4) $\begin{cases} \dfrac{3}{x} + \dfrac{4}{y} = 0 \\ \dfrac{2}{x} - \dfrac{2}{y} = 7 \end{cases}$