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## Elimination: Show your Mastery!

Find the solution of each set of equations. Show all of your work.

1) $\left\{\begin{array}{l}2 x+3 y=10 \\ -2 x+y=6\end{array}\right.$
2) $\left\{\begin{array}{c}4 x+2 y=4 \\ 3 x-y=-12\end{array}\right.$
3) $\left\{\begin{array}{l}-6 x+3 y=6 \\ 4 x+6 y=16\end{array}\right.$
4) $\left\{\begin{array}{c}5 x-2 y=16 \\ -3 x+2 y=4\end{array}\right.$
5) $\left\{\begin{array}{c}20 x+10 y=50 \\ -10 x+30 y=80\end{array}\right.$
6) $\left\{\begin{array}{c}3 x+6 y=-15 \\ 4 x-5 y=32\end{array}\right.$
7) When solving the system $\left\{\begin{array}{c}6 x-y=21 \\ 2 x+4 y=-14\end{array}\right.$, Mario added the equations together to get $8 x+3 y=7$. Explain why this would not be a useful strategy in solving the system, and say what a better first step would be. (You don't have to resolve the whole thing)

## Story Problems: Elimination

8) Arnold and Gerald have 98 footballs all together. The difference in Arnold's and Gerald's number of footballs is 32. Arnold has more footballs. Write a system of equations to represent this situation, then solve it to figure out how many footballs each of them had.
9) Joe bought some notebooks and some folders for school. He bought 11 items all together. Each notebook cost $\$ 4.00$ and each folder cost $\$ 1.00$, and Joe spent $\$ 26$ total. Write a system of equations to represent this situation, then solve it to figure out how many of each item he bought.
10) The cost of 8 muffins and 2 quarts of milk is $\$ 18$. The cost of 3 muffins and 1 quart of milk is $\$ 7.50$. Write a system of equations to represent this situation, then solve it to figure out how much each item costs.
