Using the Substitution Method

A. Use substitution to solve each system.

1. $\begin{cases} 2x + y = -1 \\ x - 2y = 12 \end{cases}$
2. $\begin{cases} 4x + 2y = 6 \\ -3x - 7y = 1 \end{cases}$
3. $\begin{cases} x - y = -5 \\ -x + 4y = 10 \end{cases}$

4. $\begin{cases} 3x + y = 4 \\ 6x + 2y = 7 \end{cases}$
5. $\begin{cases} 3x + 2y = 10 \\ -6x - 4y = -20 \end{cases}$
6. $\begin{cases} x + y = 13 \\ x - y = 2 \end{cases}$

B. You may have been puzzled by the solution to two of the systems in Question A. Complete parts (1) and (2) for each of these two systems.

1. Graph the two lines to see if you can make sense of the situation.

2. Write both equations in $y = mx + b$ form to see if this helps you understand the results.

C.

1. Decide whether writing in equivalent form or substituting would be easier for solving the system. Then, solve the system.

a. $\begin{cases} 4x + y = 6 \\ -3x + y = 1 \end{cases}$
b. $\begin{cases} 2x + y = 3 \\ -3x + 7y = 1 \end{cases}$

2. For each system, explain why you chose the solution method.