4B Systems: Setting Equal & Substitution Name: _____ Per: _____
SHOW YOUR WORK FOR FULL CREDIT. NO WORK, NO CREDIT. NO WORK IN PEN.

OBJECTIVE: Find solution(s) from a system of equations by setting equal OR substitution

Solve the following using **SETTING EQUAL**. Find **BOTH x and y**. **<u>CHECK</u>** your answers or no credit.

1 $\begin{cases} y = 5x + 3 \\ y = 6x + 4 \end{cases}$

2. $\begin{cases} y = 4x - 9 \\ y = x - 3 \end{cases}$

3. $\begin{cases} y = x + 4 \\ 3(y - 4) = 3x + 2 \end{cases}$

$5x + 3 = 6x + 4$ Solve for x, then
                        plug x in to find y.

Solution: _(_____ , _____)__
Check: (____) = 5(____) + 3

Solution: _____
Check:

Solution: _____
Check:

(____) = 6(____) + 4

4. $\begin{cases} x = y - 3 \\ x = 2y \end{cases}$

5. $\begin{cases} -2x - 6 = y \\ y = -2x - 6 \end{cases}$

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

Solution: _____
Check:

Solution: _____
Check:

Solution: _____
Check:

Rewrite the equations to compare them. State **HOW MANY SOLUTIONS** each system has. **EXPLAIN**.

7. $y = -5(x + 7)$
    $5x + y = 1$

8. $y - 9x = -5$
    $2y = 18x - 10$

9. $2y = -2x + 3$
 $y + 9 = 4x$

Solutions?_____

Solutions?_____

Solutions?_____

_____

_____

_____

10. Devin and Jase run a climbing club. They use cell phones on trips as a safety precaution. Devin's cell phone company charges $15 a month plus $0.50 a minute. Jase's company charges a flat rate of $27 with unlimited Talk and Text.

    a. Make two tables showing Devin and Jase's plans for the minutes used each month.

Devin

# of Min (x)	TOTAL $$$ (y)
0	
10	
20	
30	

Jayden

# of Min (x)	TOTAL $$$ (y)
0	
10	
20	
30	
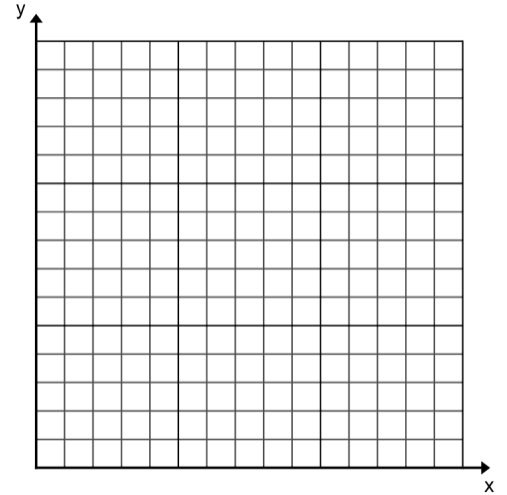
    b. Write an equation for each plan.

    Devin's:_____   Jase's: _____

   c. Label and scale the grid. (x-axis by 2 minutes and the y-axis by $4).

   d. Graph the equations on the grid

   e. Can Devin's cell phone bill be more than Jase's? _____ Explain: _____
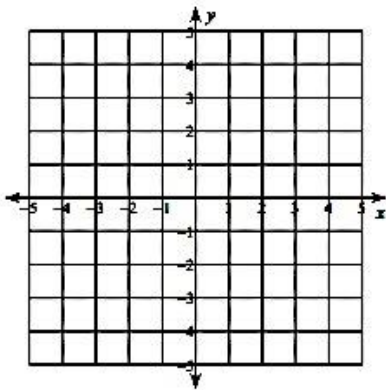
_____

   f. Circle on the graph where their bills cost the same.

   g. When will Devin and Jase's phone bills cost the same amount? _____

   h. Use setting equal to justify your answer by solving the system algebraically. (**MUST DO** for credit!).
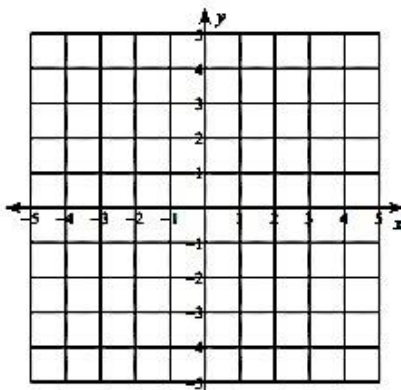
Solve the systems by graphing. **Circle** your possible solution(s).
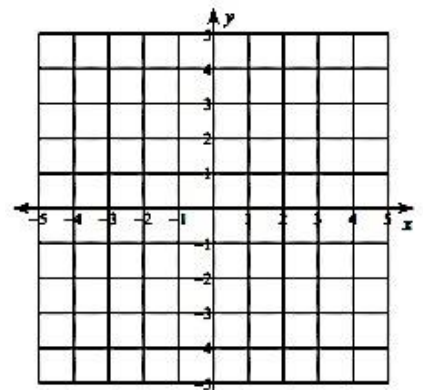
11. $y = -x - 2$
$y = -5x + 2$

12. $y > x + 2$
$y < -2x + 1$

13. $y \le \frac{1}{2}x + 2$
$y < -2x - 3$

Is (2, 3) in the sol. set? _____
Explain:

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Explain: