

**5B Systems: Setting Equal & Substitution** Name: \_\_\_\_\_ Per: \_\_\_\_\_  
 SHOW YOUR WORK FOR FULL CREDIT. NO WORK, NO CREDIT. NO WORK IN PEN.

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

1.  $\begin{cases} y = 5x + 3 \\ y = -3x - 9 \end{cases}$

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

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

$5x + 3 = -3x - 9$  Solve for x, then  
 plug x in to find y.

Solution: (\_\_\_\_\_, \_\_\_\_\_)  
 Check:  $(\quad) = 5(\quad) + 3$

Solution: \_\_\_\_\_  
 Check: \_\_\_\_\_

Solution: \_\_\_\_\_  
 Check: \_\_\_\_\_

$(\quad) = -3(\quad) - 9$

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? \_\_\_\_\_  
 \_\_\_\_\_

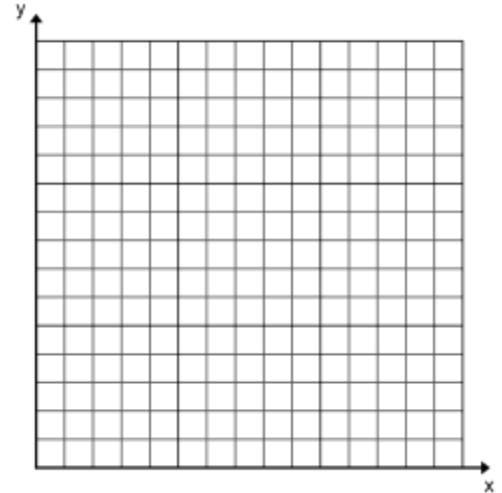
# Solutions? \_\_\_\_\_  
 \_\_\_\_\_

10. Devin and Jayden run a climbing club. They use cell phones on trips as a safety precaution. Devin's cell phone company charges \$15 a month plus \$.50 a minute. Jayden's company charges a flat rate of \$27 with unlimited Talk and Text.

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

Devin	
Minutes (x)	\$\$\$ (y)
0	
10	
20	
30	

Jayden	
Minutes (x)	\$\$\$ (y)
0	
10	
20	
30	



b. Write an equation for each plan.

Devin's: \_\_\_\_\_ Jayden's: \_\_\_\_\_

c. Graph the equations on the grid (label the x-axis by 2 minutes and the y-axis by \$4).

d. Can Devin's cell phone bill be more than Jayden's? \_\_\_\_\_ Explain: \_\_\_\_\_

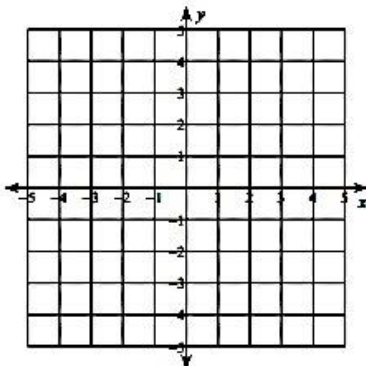
e. Circle on the graph where their bills cost the same.

f. When will Devin and Jayden's phone bills cost the same amount? \_\_\_\_\_

g. Use setting equal to justify your answer by solving the system algebraically. (**MUST DO** for credit!).

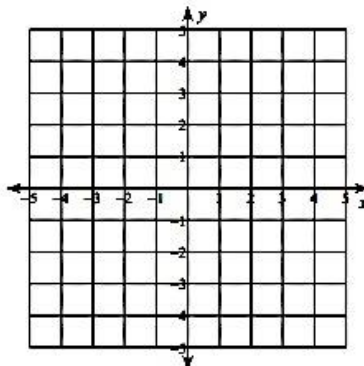
Solve the systems by graphing. **Circle** your possible solution(s).

11.  $y = -x - 2$   
 $y = -5x + 2$



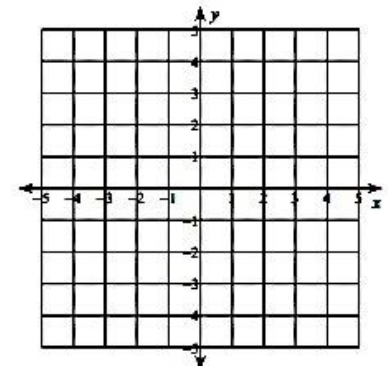
Is (2, 3) in the sol. set? \_\_\_\_\_  
 Explain: \_\_\_\_\_

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



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

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



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