Find (or make) an x= or y= equation. Plug into other equation! Solve. Don't forget your 2nd variable.

Algebra I – Unit 4:Solving Systems by Substitution

Practice – Solving Systems by Substitution

Name HW help ☺ Date _____ Period _____

Find the solution for each system of linear equations.

1. $y = 2x$, $x + y = 12$ (4, 8)

2. $y = 2x - 5$, $4x + y = 7$ (2, −1)

3. $4y + x = 5$, $x + 4y = 10$ ⇒ $x = -4y + 5$

$(-4y + 5) + 4y = 10$

y's cancel $5 \neq 10$

No solution.

4. If $-2x + 3y = 14$, $x + 2y = 7$, then $x - y = ?$

$x = 7 - 2y$

$-2(7 - 2y) + 3y = 14$

$-14 + 4y + 3y = 14$

$-14 + 7y = 14$

$+14 \quad +14$

$\frac{7y}{7} = \frac{28}{7}$

$y = 4$

$x = 7 - 2(4)$

$-1 - 4 = \boxed{}$

5. The equations of two lines are $2x - 3y = 12$ and $x = 4y + 1$. What is the value of x in the solution for this system of equations?

$2(4y + 1) - 3y = 12$

Solve for y!

If you know y, how can you find x?

Find the solution for each system of linear equations.

8. Tyler is six years older than his sister, and the sum of their ages is 32. How old is Tyler? How old is his sister?

Let Statements

Let Tyler's age be T. Let his sister's age be S.

$T = 6 + S$

$T + S = 32$

Solve this system!

Answer ~~(complete sentence)~~:

9. What mistake was made in solving the following system of equations?

$-3x + y = -4$
$3y = 15x + 6$ → $y = 3x - 4$

Step 1: $3(3x - 4) = 15x + 6$
Step 2: $9x - 12 = 15x + 6$
Step 3: $6 = 24x$
Step 4: $\frac{1}{4} = x$

A Did not solve for y correctly
B Did not distribute correctly in Step 1
C Should have subtracted $9x$ from $15x$ in Step 2
D No mistake was made

Prove it!

10. Given the equations $y - 3x = 8$ and $3x = 2y + 7$, what would you substitute for y in the equation $3x = 2y + 7$?

A $8 - 3x$
B $\frac{8}{3}x$
C $8 + 3x$
D $8 \bullet 3x$

$y - 3x = 8$

How would you solve for y?

Remember: NO WORK = NO CREDIT = NO KIDDING!