Determining Solutions the Make Equations True
Topic 3 Homework

Name _____

Period _____

Solve the Following Equations

1. $2x+5x-4x=5(3)$	2. $18=8x+6-7x+12$

Determine if the Solution makes each Equation True.

3 Does $x = 3$?

$9 + 2x = 33$

4 Does $x = 12$?

$26 = 3x - 10$

5 Does $x = 4$?

$6x - 5 = 13 + 2x$

6. Which equations have 6 as a solution? Check all that apply.

- ☐ A. $8b = 48$
- ☐ B. $11 - b = 6$
- ☐ C. $b + 3 = 9$
- ☐ D. $54 \div b = 9$

7. **Writing** Your teacher solved the equation $4x + 1 = 22 + x$. Unfortunately, due to messy handwriting, you are not sure if the solution is 2, 7, or 8.

a) Describe how you can find the solution without solving the equation again.

b) Use this to find the solution.

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olve the Following Equations.

1. $2x+5x-4x=5(3)$

$3x = 15$

$\div 3 \quad \div 3$

$x = 5$

2. $18=8x+6-7x+12$

$18 = 8x - 7x + 6 + 12$

$18 = x + 18$

$-18 \quad -18$

$0 = x$

Determine if the Solution makes each Equation True.

3 Does $x = 3$?

$9 + 2x = 33$

$9 + 2 \cdot 3 \stackrel{?}{=} 33$

$9 + 6 = 33$

$15 \neq 33$

NO!

4 Does $x = 12$?

$26 = 3x - 10$

$26 \stackrel{?}{=} 3 \cdot 12 - 10$

$26 = 36 - 10$

$26 = 26$ ✓

YES!

5 Does $x = 4$?

$6x - 5 = 13 + 2x$

$6 \cdot 4 - 5 \stackrel{?}{=} 13 + 2 \cdot 4$

$24 - 5 = 13 + 8$

$19 \neq 21$

NO!

6. Which equations have 6 as a solution? Check all that apply.

- [x] A. $8b = 48$
- [ ] B. $11 - b = 6$
- [x] C. $b + 3 = 9$
- [x] D. $54 \div b = 9$

A) $8 \cdot 6 \stackrel{?}{=} 48$; $48 = 48$ ✓

B) $11 - 6 \stackrel{?}{=} 6$; $5 \neq 6$

C) $6 + 3 \stackrel{?}{=} 9$; $9 = 9$ ✓

D) $54 \div 6 \stackrel{?}{=} 9$; $9 = 9$ ✓

7. **Writing** Your teacher solved the equation $4x + 1 = 22 + x$. Unfortunately, due to messy handwriting, you are not sure if the solution is 2, 7, or 8.

a) Describe how you can find the solution without solving the equation again.

You can plug in (substitute) the possible solutions into the equation and see which value balances the equation.

b) Use this to find the solution.

Try 2

$4 \cdot 2 + 1 \stackrel{?}{=} 22 + 2$

$8 + 1$

$9 \neq 24$

Try 7

$4 \cdot 7 + 1 \stackrel{?}{=} 22 + 7$

$28 + 1$

$29 = 29$ ✓

Try 8

$4 \cdot 8 + 1 \stackrel{?}{=} 22 + 8$

$32 + 1$

$33 \neq 30$

The solution is 7.