

### Homework: Solving Multi-Step Equations

Solve each equation. Then check your solution. **SHOW YOUR WORK!!**

~~1.~~  $\frac{3}{2}y - y = 4 + \frac{1}{2}y$

~~2.~~  $3(x - 4) = 3x - 12$

~~3.~~  $7 - 3x = x - 4(2 + x)$

4.  $6(y + 2) - 4 = -10$

5.  $-8(4 + 9x) = 7(-2 - 11x)$

6.  $4(2a - 8) = \frac{1}{7}(49a + 70)$   
 $8a - 32 = 7a + 10$   
 $-7a \quad -7a$   


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 $a - 32 = 10$   
 $+32 \quad +32$   
 $(a = 42)$

Describe the mistake that was made by the student that tried to solve these equations. Then solve the equation the correct way on the right side.

7.  $-5(2x - 4) = 8x$   
 $-10x - 20 = 8x$   
 $-18x - 20 = 0$   
 $-18x = 20$   
 $x = -\frac{10}{9}$

$-5(2x - 4) = 8x$



8.  $12x = \frac{x-4}{3}$   
 $12x + 4 = 3$   
 $12x = -1$   
 $x = -\frac{1}{12}$

**CAN NOT** add the 4 first!  
 Must multiply by 3 first!

~~$3 \cdot 12x = \frac{x-4}{3} \cdot 3$~~   
 ~~$36x = x - 4$~~

Write the property that was used on the line beside each step.

Addition Property,  
 Subtraction Property,  
 Multiplication Property,  
 Division Property,  
 Distributive Property,  
 Or Combining Like Terms???

9.  $8(2x + 5) = 2x + 12$   
 $16x + 40 = 2x + 12$   
 $14x + 40 = 12$   
 $14x = -28$   
 $x = -2$

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10.  $\frac{12x+2}{3} = 2x$   
 $12x + 2 = 6x$   
 $6x + 2 = 0$   
 $6x = -2$   
 $x = -\frac{1}{3}$

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