Name:_____ Date:_____

Math 8H HW CH2 Lesson 2 Solving Equations with Simple Operations

1. Solve the following equations for "x" . If the answer is a fraction, simplify to lowest terms.

a) $3x-5=13$	b) $\frac{5n}{6}=12$	c) $8+5x=12$
d) $-6x+4=-8$	e) $12=\frac{-4x}{3}+2$	f) $13=-3x-2$
g) $\frac{2x}{5}-4=12$	h) $\frac{3}{x}=\frac{1}{12}$	i) $9x-0.5=3x$
j) $\frac{30x}{4}=\frac{20}{7}$	k) $x+(x+1)+(x+2)=-75$	L) $3-\frac{2}{x}=5$
m) $\frac{3x}{8}=x+1$	n) $4x+12=8x-5$	O) $4x+2-9x=8+7x-4$

p) $x+(x+1)+(x+2)=-75$	Q) $11x-4(2x-3)=24$	R) $3(4x-8)=3x+1$
s) $2(x+3)=3(x-5)$	t) $9x-8+12x=14-12x+3$	u) $1.4(x-5)=2.8(3x+5)$
v) $(11x+7)-(7x-3)+(6x+1)=56$	w) $\frac{1}{2}\left(\frac{1}{3}-\frac{1}{x}\right)=\frac{1}{4}$	x) $3x-(1-x)=5$
y) $7x-(1-x)-(4-x)=5$	z) $(11x+7)-(7x-3)+(6x+1)=56$	zz) $12x-(6-9x)=9x+(-8)$

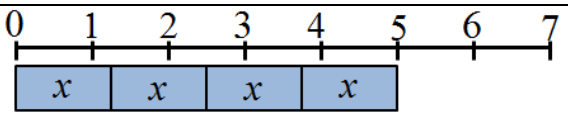
2. Tim and his friend Sara together have $38. Tim has $4 more than Sara. Write an equation to represent how much money they have together. Indicate what your variable is.

3. Tom is 7 years older than his friend Jason. Together, they are 57 years old. Write an equation to represent how old they are together. Indicate what your variable is.

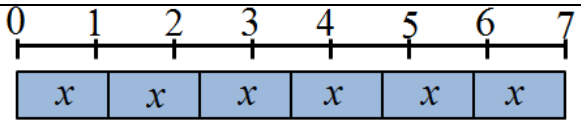
4. There are 50 cupcakes in the staff room. Mr. CHEONG ate some of the cupcakes and Mr. Young ate twice as much as Mr. Cheong. Afterwards, there are 11 cupcakes left. Write an equation for how many cupcakes there are. What is your variable?

5. Given each diagram, find the length of each bar:

a)



b)



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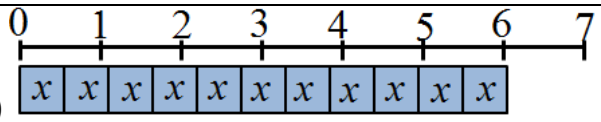

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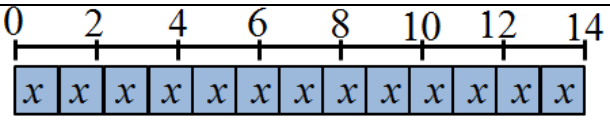

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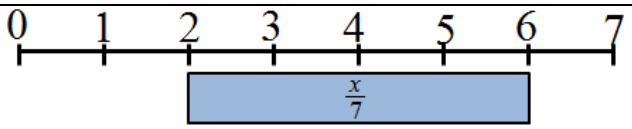
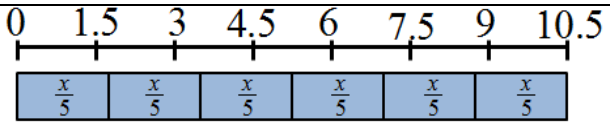


f)



6. Two positive integers are in the ratio of 8 to 13. If the difference between them is 35, find the larger integer.

7. The lengths of fix of six line segments are $3x+1,\ 2-2x,\ 5x-1,\ 4x-3,\ and\ 3x+2$. Find the lengths of the sixth segment in terms of "x" if the mean of all six segments is $3x-2$

8. In the equation below, a student solves the equation by subtracting 5 from both sides. Is this step correct? Explain: $3x-5=12$

9. Tim solves the equations below with the work shown. Explain if there are any errors:

$s1:\ 6x+12=24$
$s2:6x+12=24$
$\overline{12}\quad\overline{12}$
$s3:6x+1=2$
$s4:6x=1$
$s5:x=\frac{1}{6}$

$s1:\frac{5x}{3}+1=9$
$s2:\frac{5x}{3}=10$
$s3:3\times\frac{5x}{3}=10\times3$
$s4:\frac{15x}{9}=30$
$s5:x=30\times\frac{9}{15}$
$s6:x=18$

$s1:\ 6x=7$
$s2:\ 6\times(6x)=7\times6$
$s3:\ 36x=42$
$s4:x=42-36$
$s5:x=6$

10. Given that $n!$ means the product of all natural numbers from "n" to 1, simplify the following:

$$5!\left(\frac{1}{2!}-\frac{1}{3!}-\frac{1}{5!}\right)$$

11. If $x+y=12$ and $x-y=8$, what is the value of $2x-xy$?