

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Math 9 HW Chapter 6.2: Solving Equations with Variables on Both Sides:

1. Solve each of the following equations:

a) $3x + 10 = 5x - 20$	b) $6x - 14 = 2x + 18$
c) $22 - 7x = 14x - 20$	d) $51 - 8x = 2x + 11$
e) $4(x - 3) + 9 = 7x + 15$	f) $24 - 5(2x - 8) = 6x$
g) $22 - 8x = 5(10 - 3x)$	h) $3(4x - 1) + 13 = 5(x + 4)$
i) $2(3x + 4) + 5x = 10(6 - x) + 1$	j) $4 + 3x - 29 = 13 - 5x$
k) $2x + 4(2x + 3) = 5(2x + 9) - 33$	l) $6x + 13 = 2(3x - 5) + 11$

2. Find the Lowest Common Denominator for each of the following fractions:

a) $\frac{1}{6}$ and $\frac{1}{14}$	b) $\frac{1}{5}$ and $\frac{1}{15}$	c) $\frac{1}{15}$ and $\frac{1}{12}$
d) $\frac{1}{3}$ , $\frac{1}{5}$ and $\frac{1}{7}$	e) $\frac{1}{10}$ , $\frac{1}{15}$ and $\frac{1}{6}$	f) $\frac{1}{6}$ , $\frac{1}{10}$ and $\frac{1}{16}$

3. When solving an equation with fractions, why are we finding the LCD? Explain using your own words

4. Solve each of the following equations. Show all your work and steps

a) $\frac{x}{2} + 13 = x + 7$	b) $\frac{-2}{5} = 2x - \frac{17}{5}$
c) $\frac{-7x}{2} - 1 = \frac{-11}{4}$	d) $48 = 18\left(\frac{2x}{3} - 1\right)$
e) $\frac{x}{5} + \frac{2}{3} = \frac{3x}{4} - \frac{1}{5}$	f) $\frac{2x}{3} + \frac{5}{2} = \frac{3x}{4} - \frac{11}{3}$

$$\text{g) } \frac{10x}{3} - \frac{24}{5} = \frac{6x}{5} + \frac{8}{3}$$

$$\text{h) } \frac{18x}{7} - \frac{48}{4} = \frac{15x}{4} - \frac{14}{7}$$

$$\text{i) } \frac{-1}{2}(4x+6) = \frac{1}{2}(9-3x)$$

$$\text{j) } \frac{5}{2}(2x+16) = \frac{1}{5}(30x+20)$$

$$\text{k) } \frac{8}{3}(6x+7) - 8x = \frac{1}{2}(4-x) + 11$$

$$\text{l) } \frac{3}{4}(2x+3) + \frac{3}{5}(8x-2) = 9x$$

5. A student answered the following two questions with their work shown below. Is there a mistake in their work? What conclusion can you make from their work?

<i>Student A</i>	<i>Student B</i>	<i>Student C</i>
$3(2x - 8) = 6x - 12$	$5x(2x - 8) + 10 = 10x^2 - 40x + 10$	$2x + 4x + 10 = 3(2x + 3) + 2$
$6x - 24 = 6x + 12$	$10x^2 - 40x + 10 = 10x^2 - 40x + 10$	$6x + 10 = 6x + 9 + 2$
$-6x \quad -6x$	$-10x^2 \quad -10x^2$	$-6x \quad -6x$
$24 = 12$	$-40x + 10 = -40x + 10$	$10 = 11$
	$+40x \quad +40x$	
	$10 = 10$	

6. Jason worked 3 years and saved some money. His brother has half of what he saved and his sister has  $\frac{2}{3}$  of what he saved. Together they have \$25,000. How much money does each person have? Write an equation to solve this question and then show all your work and steps.
7. Tom bought three burgers and three drinks. He also bought two hotdogs that cost \$3.50 each. If a drink costs \$2.75 and everything costs \$32.50, how much is a burger? Write an equation to solve this question and then show all your work and steps.
8. Tom is twice as his younger brother Dave. In eight years from now, Tom will be six years older than Dave. How old is each person now?