Sec 1 H

Assignment 1-3 **Equations and Inequalities**

Unit 1

Solve each equation or inequality. Justify your steps using the properties of equality or inequality.

1	6x + 3 = 15	Justification	2.	3x - 10 = 2	Justification
	-B -3	Subtraction Property of Equality			
	6× +12	Division Property of Equality			
	X=2				

3.	$8x - 10 \stackrel{1}{=} x + 11$		Justification		
	-X	-X	subtraction Property at Equality		
	7x-10:	· II	of Equality		
	+10	+10	Addition Property of Equality		
	7x =	71			
	7	57	Division Property of Equality		
			of Equality		
	X =	-3			

4.	5p - 2 = 32	Justification

Justification

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

Justification

 $10y+50=10$

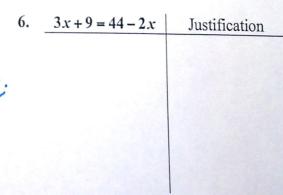
Distributive Property

subtraction Property

 $10y=-40$

Division Property

of Equality



Solve each equation or inequality. Justify your steps using the properties of equality or inequality.

7	$2x - 4 \le 10$	Justification	8.	$5 - 4x \le 17$	Justification
	+4 +4 2× ≤ 14 2× ≤ 14 × ≤ 7	Addition Prop. of Inaquality Division Property of Treq.		car gilak mi	

9. $2(x-3)$	$\leq 3x-2$	Justification 10	$\frac{x}{2} > -$	10 J	ustification
2x -6 +6 2x	+6	Distributive Pap. Addition Prop. of Ineq. subtraction Prop. of Ineq.		9	
- <u>lx</u>	4 -1	Division Propos Ireq.			
X	≥4				

Solve the following inequalities. You do not need to justify your steps.

11.
$$5(4x+3) \ge 9(x-2) - x$$

 $20 \times +15 \ge 9 \times -18 - x$
 $20 \times +15 \ge 8 \times -18$
 $-8 \times$
 $12 \times +18 \ge -18$
 -15×-15
 $12 \times 2 \times -33$
 $12 \times 2 \times -33$

12.
$$\frac{2}{3}x - \frac{1}{2}(4x - 1) \ge x + 2(x - 3)$$

Henry and Serena have been working on equations and inequalities. The following questions are some things that Henry and Serena have been thinking about Your job is to decide who is right and give a mathematical explanation of your reasoning.

13. Henry and Serena are assigned to graph the inequality $x \ge -7$.

Henry thinks the graph should have an open dot at -7.

Serena thinks the graph should have a closed dot a -7.

Who is correct? Why?

Serena. \geq means greater than or equal to that the "equal to" part means use a <u>closed</u> pot.

14. Henry and Serena are looking at the problem 3x + 1 > 0.

Serena says that the inequality is always true because multiplying a number by three and then adding one to it makes the number greater than zero.

Is she right? Explain why or why not.

15. Henry is thinking hard about equations and inequalities and comes up with this idea: If 45 + 47 = t, then t = 45 + 47. So, if 45 + 47 < t, then t < 45 + 47. Is he right or wrong? WHY?

wrong. 45+472t
and t>45+472t
are the same.

He forgot to FLIP the inequality sign.

16. Serena is checking her work with Henry and finds that they disagree on a problem.

Here is what Serena wrote:

$$3x + 3 \le -2x + 5$$
$$3x \le -2x + 2$$
$$x \le 2$$

Is she right? Explain why or why not?