Name: _____ Score: ____ out of 70

Folder Check Algebra Unit #2

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Worksheet Policy

-0 All Questions Done

-1 More than Half Done

-2 Only Groupwork Q's

-3 Less than Half Done

-4 Blank/Absent

Notes Policy

-0 All boxes filled

-1 One Empty Box

-2 Two Empty Boxes

-3 Less than Half Done

-4 Blank/Absent

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Name: _____ Date: Algebra Unit 2

Lesson #1

Solving One Step Equations

Addition/Subtraction

Solve each equation.

1. $x + 5 = 9$ $-5 \quad -5$ Subtraction $x + 0 = 4$ $x = 4$	2. $a + 12 = 16$	3. $c + 8 = 17$
4. $y - 4 = 3$	5. $x - 7 = 5$ $+7 \quad +7$ addition $x + 0 = 12$ $x = 12$	6. $b - 1 = 21$
7. $f + 7 = 12$	8. $g + 2 = 19$	9. $t + 11 = 15$
10. $s - 12 = 10$	11. $c - 16 = 8$	12. $a + 15 = 16$
13. $x + 4 = -5$	14. $y + 3 = -12$	15. $m + 4 = -10$

Algebra

Lesson #1

One-Step Equations – Multiplication and Division

Solve the one-step equations:

16. $7 = \frac{b}{11}$

(11) (11) multiplication

$77 = 1b$

$77 = b$

#17. $-105 = -5g$

$\div -5 \quad \div -5$ division

$+21 = 1g$

$+21 = g$

18. $72 = -18h$

19. $-16 = \frac{k}{7}$

20. $-9 = \frac{n}{-19}$

#21 $-900 = 10a$

22. $126 = 7t$

23. $35 = \frac{v}{-6}$

Name: _____ Unit # 2 Lesson # 1

Activator

New Vocabulary (1 of 4)

New Vocabulary (2 of 4)

New Vocabulary (3 of 4)

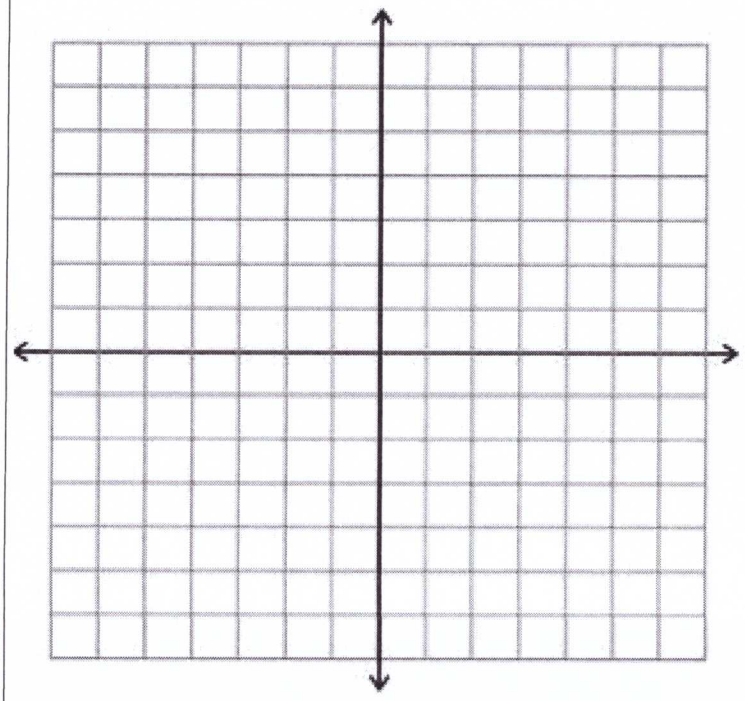
Unit # 2 Lesson # 1

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper



Name: _____ Date: Algebra

Solving Two Step Equations Lesson #2

Unit 2

1. $3x + 5 = 35$ $-5 \mid -5$ ← Subtract ÷ divide $3x = 30$ $\div 3 \mid \div 3$ $x = 10$	2. $5a + 17 = 47$	3. $4x - 1 = 15$ + add ÷ divide
4. $3y - 5 = 16$	5. $55 = 6a + 7$	6. $17 = 8c - 7$
7. $15x + 49 = 19$	8. $75 = 11 + 16x$	9. $14 = 12b + 8$
10. $8 = 18c - 10$	11. $11 = 15m - 19$	12. $11 = 16d - 5$
13. $\frac{3a}{8} = 12$ ( ) Multiply ÷ Divide	14. $\frac{4c}{9} = 20$	15. $42 = \frac{7d}{8}$
16. $\frac{2}{3}x = 18$	17. $12 = \frac{3}{4}y$ ( ) Multiply ÷ divide $(4) \mid (4)$ $48 = 3y$ $\div 3 \mid \div 3$ $16 = y$	18. $\frac{3}{5}m = 30$

-5-

* only do half of the questions.

22. $\frac{x}{3}+4=13$ -subtract ()multiply	23. $\frac{w}{4}-9=51$ +add ()multiply	24. $15=\frac{b}{7}-8$
25. $12=\frac{y}{5}+3$	26. $6m+12=18$	27. $9d-1=17$
28. $4a+1=5$	29. $4=3t-2$	30. $\frac{1}{3}x-5=11$ +add ()multiply
31. $\frac{x}{9}+4=13$	32. $13=\frac{y}{3}-5$	33. $47=\frac{3t}{5}+7$

* Only do half of the questions.

Name: _____ Unit # 2 Lesson # 2

Activator

New Vocabulary (1 of 4)

New Vocabulary (2 of 4)

New Vocabulary (3 of 4)

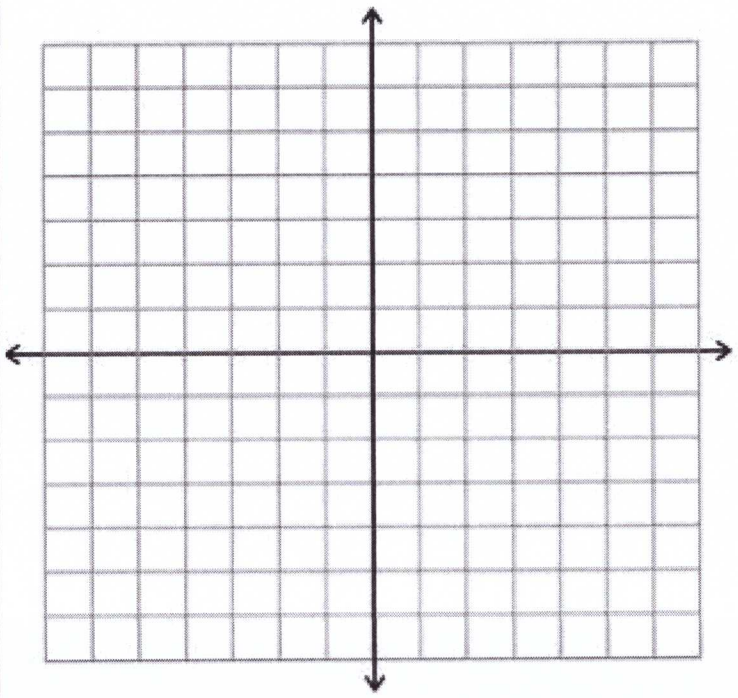
Unit # 2 Lesson # 2

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper



Solving Multi-Step Equations

Variables on Both Sides - Negative Coefficients

Name: _____ **Date:** Alg Unit 2

Lesson #3

Solve the equations. for x

(1) $-34 - 6x = 12 - 4x$

$+4x \quad +4x$ Addition with x

$-34 \quad -2x = 12$

$+34 \quad +34$ Addition without x

$\frac{-2x}{-2} = \frac{46}{-2}$ Division

$x = -23$

(2) $-9x - 66 = 86 - x$

Add x or 1x

(5) $-113 - 8x = -14x + 37$

Add 8x

(6) $-106 + 15x = 11x + 34$

Subtract 11x

(9) $-13x - 34 = 14 - 15x$

Add 13x

(10) $7x - 43 = 12x + 42$

Subtract 7x

Solve for x:

3. $8x + 4 = 2x + 52$

Subtract ___ x

4. $5x - 6 = 8x + 30$

Subtract ___ x

7. Eight times a number is 36 more than twice the same number. Find the number.

$8x = 36 + 2x$

subtract ___ x

8. If three times a number is increased by 22, the result is 14 less than seven times the same number. Find the number.

$3x + 22 = 7x - 14$

subtract ___ x

9. Zhoe is comparing two local yoga programs. Hey-Yoga charges $90 a month and a $35 one time registration fee. Yoga-Bear charges $80 a month with a $75 one-time registration fee. After how many months will the two schools charge the same amount? What conclusion can you come to about long and short term memberships?

Hey-yoga Yoga-Bear

$90m + 35 = 80m + 75$

Let m= # of months

Subtract ___ x

m = _____

which gym is better for 3 months? _____

Name: _____ Unit # 2 Lesson # 3

Activator

New Vocabulary (1 of 4)

New Vocabulary (2 of 4)

New Vocabulary (3 of 4)

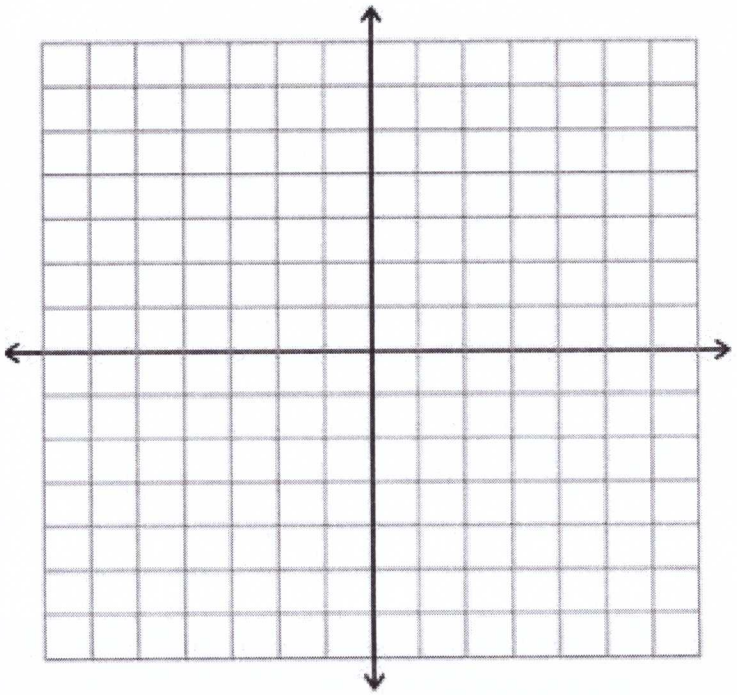
Unit # 2 Lesson # 3

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper



Name : _____ DATE : Algebra

Lesson #4

Solving One-Step Inequalities

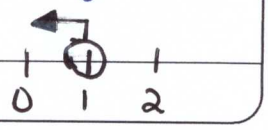
Solve each inequality.

1) $x + 5 < 6$

$-5 \quad -5$ Subtract

$x < 1$

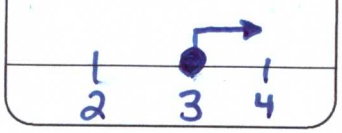
↓ answer



2) $3x \geq 9$

$\div 3 \quad \div 3$ divide

$x \geq 3$



3) $x - 2 > 4$

4) $\frac{x}{9} \leq 1$

5) $10 + x > 17$

6) $6x < 12$

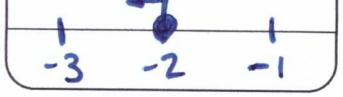
7) $-x \geq 2$

Flip

$\div -1 \quad \div -1$ divide

flip

$x \leq -2$



8) $-x < 5$

Flip

9) $-x \leq 16$

Flip

10) $\frac{x}{-1} > 12$

Flip

$(-1) \quad (-1)$ multiply

$x < -12$

11) $\frac{x}{-1} \leq 1$

Flip

12) $\frac{x}{-1} \geq 7$

Flip

Date Alg

Lesson #4

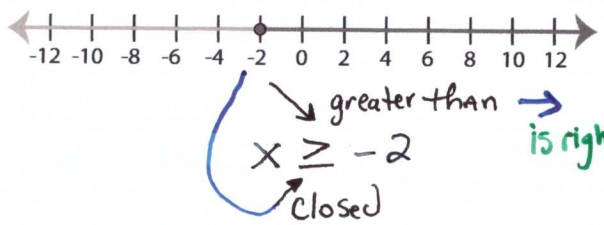
Identifying Inequalities

< Less than

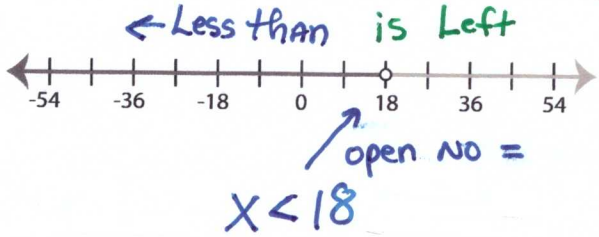
> greater than

Choose the correct inequality that best describes each graph.

1)

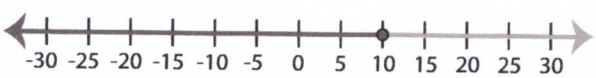


2)



3)

4)



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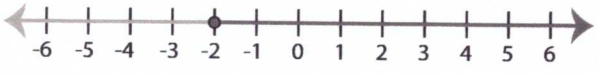

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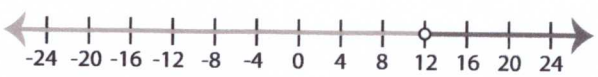

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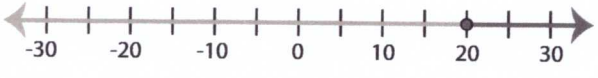

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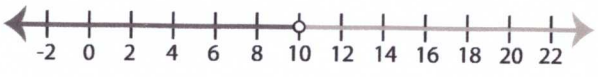


Name: _____ Unit # 2 Lesson # 4

Activator

New Vocabulary (1 of 4)

New Vocabulary (2 of 4)

New Vocabulary (3 of 4)

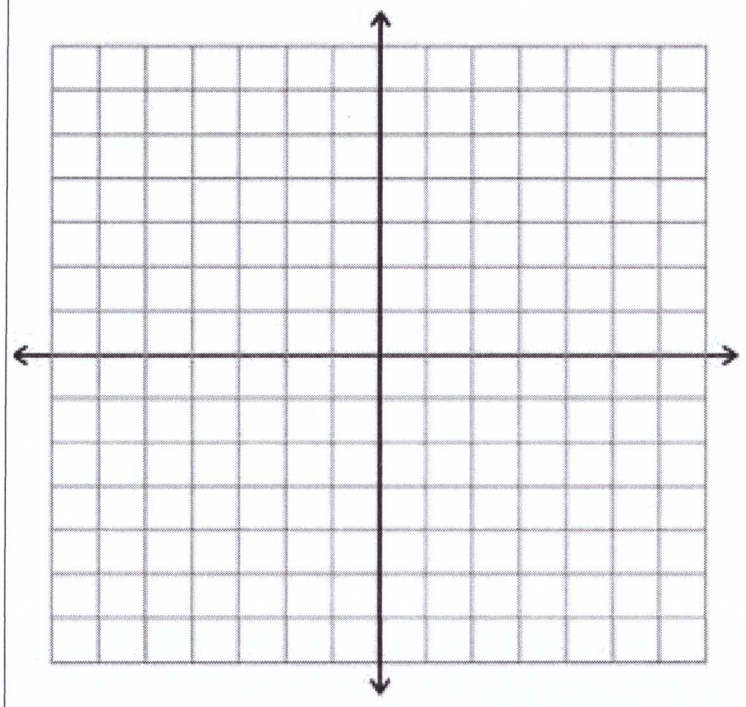
Unit # 2 Lesson # 4

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper



Name: _____ Date: Alg

Lesson #5

LINEAR WORD PROBLEMS
COMMON CORE ALGEBRA I

Unit 2

Although word problems can often be some of the most challenging for students, they give us great opportunities to refine our understanding of the relationships between quantities and how to manipulate expressions to solve equations. When you solve any real world problem in mathematics you are **modeling** a physical situation with **mathematical tools**, such as **equations**, **diagrams**, **tables**, as well as many others.

As we work through these problems, try to make sure to always do the following:

MODELING AND SOLVING LINEAR WORD PROBLEMS

1. Clearly define the quantities involved with common sense variables and **let statements**.
2. Use your **let statements** to write out expressions for **quantities that you are interested in**.
3. Carefully translate the information you are told into an equation.
4. Solve the equation – remember to mentally note the justification for each step.
5. Check the reasonableness of your answer! This could be the most important, and neglected, step in the modeling/problem solving method.

Let's start off with a reasonably easy example.

***Exercise* #1:** The sum of a number and five more than the number is 17. What is the number?

(a) First experiment with some numbers. This will help you when going to the abstract with variables.

_ + 5 + _ = 17

(b) Now, let's carefully set up **let statements** and an **equation** that relates the quantities of interest. Solve the equation for the number.

Let x = a Number

***Exercise* #2:** The difference between twice a number and a number that is 5 more than it is 3. Write an equation(s) could be used to find the value of the number, x. Explain how you arrived at your choice.

_x − (x + 5) = 3

Date: Alg

Lesson # 5

LINEAR WORD PROBLEMS
COMMON CORE ALGEBRA I HOMEWORK

FLUENCY

3. The sum of three times a number and 2 less than 4 times that same number is 15.

$\_(x+2) - \_x = \_$

4. The sum of 3 less than 5 times a number and the number increased by 9 is 24. What is the number?

$5x - 3 + x + \_ = \_$

What is the number?

$x = \_\_\_\_$

5. Tom is 4 more than twice Andrews age. Sara is 8 less than 5 times Andrews age. If Tom and Sara are twins, how old is Andrew?

$T = 4 + 2A$ Set equal

$S = 5A - 8$

$\_A - \_ = \_ + \_A$

How old is Andrew? $A = \_\_\_\_$

How old is Tom? $T = \_\_\_\_$

How old is Sara? $S = \_\_\_\_$

Name: _____ Unit # 2 Lesson # 5

Activator

New Vocabulary (1 of 4)

New Vocabulary (2 of 4)

New Vocabulary (3 of 4)

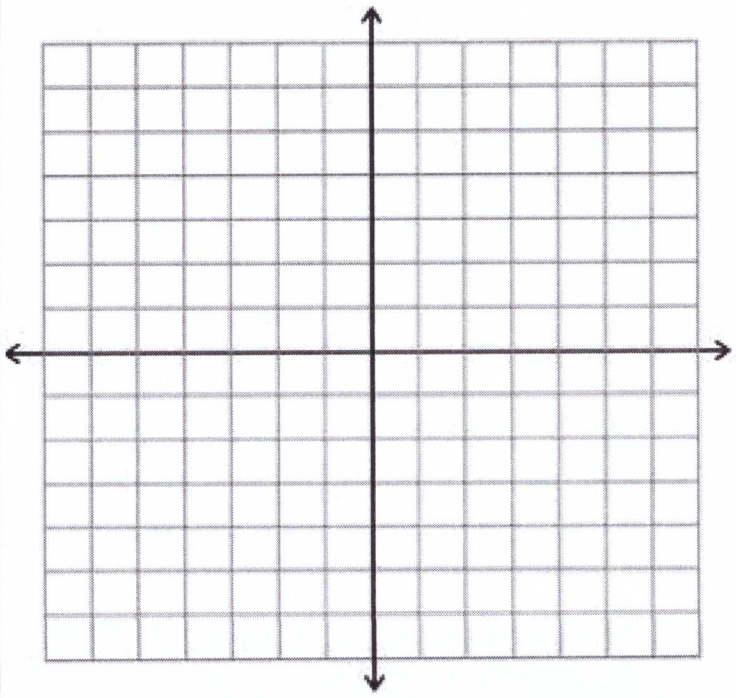
Unit # 2 Lesson # 5

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper



Name: _____

Solving Literal Equations

Algebra | Lesson #6 |

Date Algebra Unit 2

Literal equations are solved like all other equations...all letters are to be treated as numbers except the letter to be solved.

Example: Solve for x in terms of b and c.

$2x + b = c$

$-b \quad -b$ Subtraction

$2x = c - b$

$\div 2 \quad \div 2$ division

$x = \frac{c-b}{2}$ Answer

$\frac{x}{2} - b = c$

$+b \quad +b$ addition

$\frac{x}{2} = c + b$

$(2) \quad (2)$ multiplication

$x = 2(c+b)$

1) Solve for x in terms of B $\quad x - 5 = B$ addition

2) Solve for x (by itself) in terms of M. $\quad M = 2x$ division

3) Solve for x in terms of C. $\quad x + c = 3$ Subtraction

4) Solve for x in terms of A. $\quad A = \frac{x}{2}$ multiplication

$\_\_\_ = x$

Multistep equations.

Algebra

Lesson #6

5) If $A+2x = 3$, then x is equal to:

Subtraction

Division

7) Solve for x in terms of a, b, and c: $ax - b = c$

Addition

Division

9) Solve for x in terms of a, b, and c: $\frac{x}{2} + A = y$

Subtraction

multiplication

Name: _____ Unit # 2 Lesson # 6

Activator

New Vocabulary (1 of 4)

New Vocabulary (2 of 4)

New Vocabulary (3 of 4)

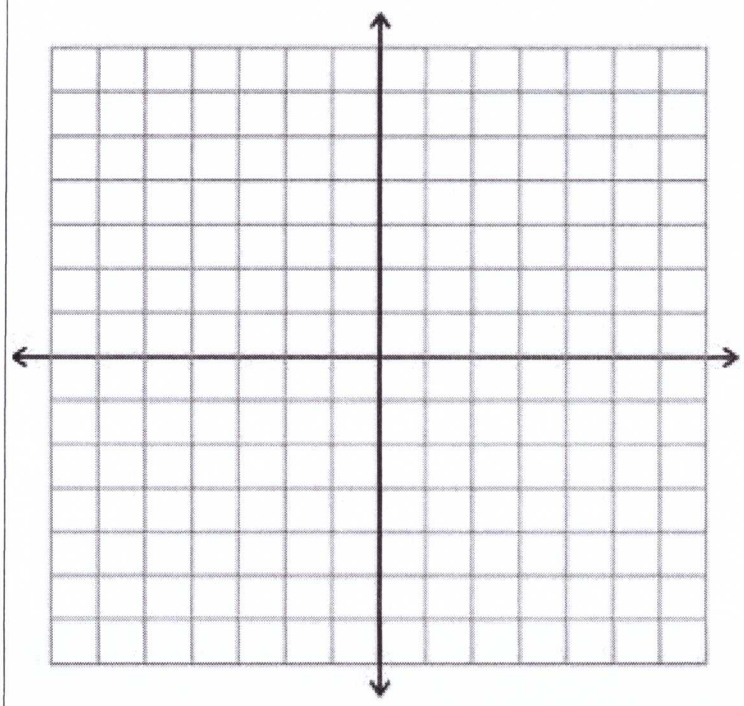
Unit # 2 Lesson # 6

Misconception (4 of 4)

Work Period

Exit Ticket

Extra Graph Paper



Name: _____

UNIT #2 Study Guide
Algebra I

PART I QUESTIONS: Answer all questions in this part by writing the choice of the appropriate answer in the blank beside the problem. Please show all of your work.

1. Which of the following values of x is a solution to the equation $4(x-3)+8=68$

2. Solve the two step equation $\frac{x}{-4}+5=-7$

3. Write a true inequalities when $x=-2$

$x <$ ____ $x \leq$ ____

$x >$ ____ $x \geq$ ____

4. Two times the sum of a number, n, and 4 is at most 20 Which of the following inequalities properly models this statement? Write this statement.

< means _____

> means _____

≤ means _____

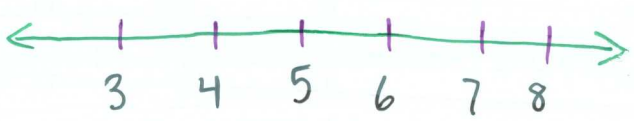
≥ means _____

5. Max correctly starts solving the linear equation $3(x+7)=-9$ writing $x+7=-3$ Which of the following properties justifies what Max wrote?

$x+7=-3$

6. Which of the following graphs shows the solution set to $3x-7>8$

Graph the solution



Circle: greater than OR less than

open circle
OR
Closed circle

why?

7. The value $x=8$ is a solution to each of the following, except which?

$x-4>3x$ OR $2(x+3)=4x-10$

8. Plato was saving $10 each week in order to have enough money for a phone that costs $150. If his father started him off with $20 which of the following is the minimum number of whole weeks Plato will need to save?

Write an equation and solve.

Name: _____ Date: Unit 2 Study Guide

Algebra

PART II QUESTIONS: Answer all questions in this part. Please show all of your work.

9. The volume of a cone is given by the formula $V=\frac{1}{3}\pi r^2 h$. Solve this equation for the height, h in terms of V and r.

10. When a number, x is increased by 4, and then the result is multiplied by 6 is equal to 18. Write an equation and solve it to find the value of x.

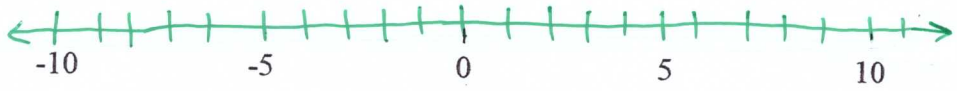
11. Justify your response, is the value $x=-4$ a solution to the inequality $5x-3>6x$

12. Solve the following equation for x. Show the manipulations that lead to your final answer.

$$7(x+2)-3x+4=(x-5)+(x-3)$$

13. Algebraically solve the inequality $5x - 146 \leq -9(3x + 2)$

14. Graph the inequality from #13 on the number line.



15. Give a property of real numbers or a property of equality to justify each step in the solution of the equation shown below.

$4x - 8 + 2x + 1 = -37$

_____ Step 1 $4x + 2x - 8 + 1 = -37$

_____ Step 2 $6x - 7 = -37$

_____ Step 3 $6x = -30$

_____ Step 4 $x = -5$

16. Solve the following multistep equation. $-3x - 4 = -22$