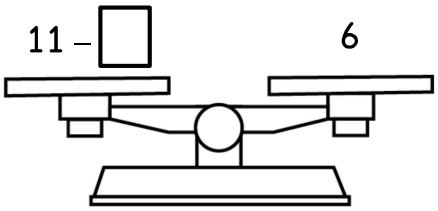
Unit: Equations and Inequalities
Student Handout 1

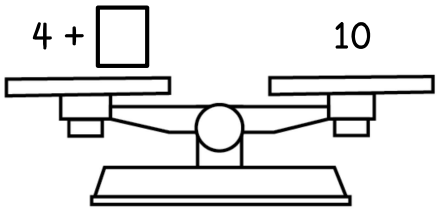
Name _____

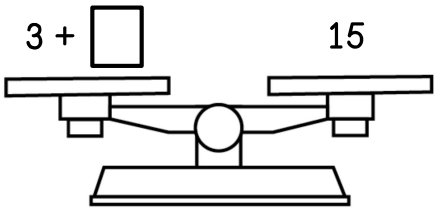
Date _____ Pd _____

ONE-STEP EQUATIONS: ADDITION & SUBTRACTION

Fill in the missing number to keep the scales balanced.



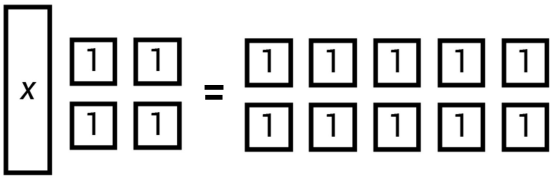


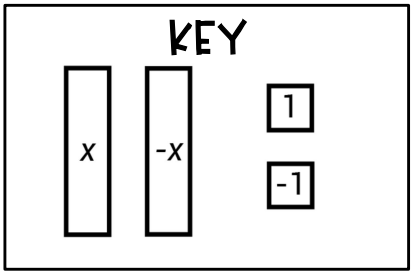


SOLVING ONE-STEP EQUATIONS

- Solving equations allows you to find a missing value, or variable.
  - The _____ must be alone or _____ on one side of the equation.
  - Isolate the variable by using _____ operations.
  - Keep your equation _____.
  - Check your _____ by plugging your answer back into the equation.

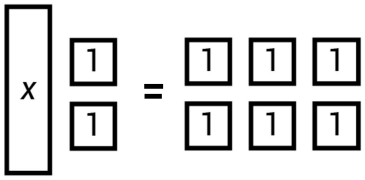
1. Use the key to write and solve the equation represented below.





Equation: _____ Solution: _____

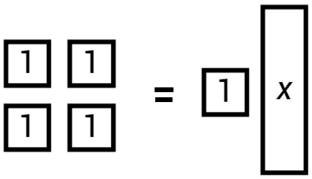
2. Write and solve the equation represented below.



Equation: _____

Solution: _____

3. Write and solve the equation represented below.



Equation: _____

Solution: _____

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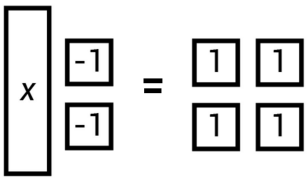
Use your understanding of solving one-step equations to answer the questions below.

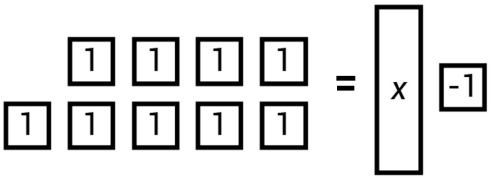
4. Write and solve the equation represented below.



Equation: _____

Solution: _____

5. Write and solve the equation represented below.



Equation: _____

Solution: _____

Solve the following one-step equations. Draw algebra tiles if needed, and then check your work.

6. $x - 6 = 12$

_____

CHECK & GRAPH:

7. $x + 5 = 11$

_____

CHECK & GRAPH:

8. $15 = x - 2$

_____

CHECK & GRAPH:

9. $17 = x + 4$

_____

CHECK & GRAPH:

10. $x + 19 = 35$

_____

CHECK & GRAPH:

11. $46 = x - 22$

_____

CHECK & GRAPH:

12. $x - 27 = 31$

_____

CHECK & GRAPH:

13. $54 = x + 33$

_____

CHECK & GRAPH:

Summarize today's lesson:

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Unit: Equations and Inequalities
Homework 1

Name _____

Date _____ Pd _____

ONE-STEP EQUATIONS: ADDITION & SUBTRACTION

Match each correct answer to a letter and complete the riddle below.

1 $x - 7 = 4$	**6** $23 = x - 13$
2 $9 + x = 14$	**7** $14 = x + 12$
3 $x + 7 = 16$	**8** $9 = x - 6$
4 $x + 3 = 28$	**9** $x - 2 = 21$
5 $17 + x = 18$	**10** $x - 7 = 26$

I: 9	E: 15	R: 22	D: 25	B: 6	M: 8
J: 4	W: 11	H: 3	O: 2	A: 1	F: 10
T: 36	N: 18	C: 5	S: 23	U: 33	G: 19

WHY DIDN'T BOB DRINK A GLASS OF WATER WITH 8 PIECES OF ICE?

___	___	___	___	___	___	___	___	___	___	B	___	___
3	6	1	5	9	6	1	7	2	10		8	4

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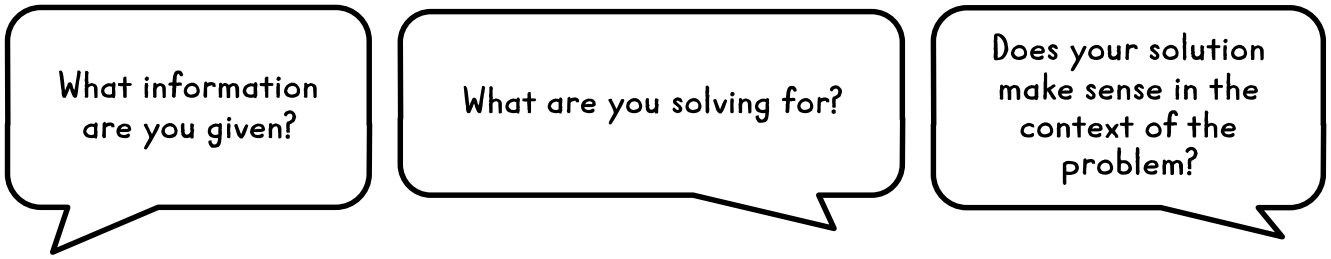
Unit: Equations and Inequalities
Student Handout 2

Name _____

Date _____Pd_____

ONE-STEP EQUATIONS APPLICATION I

Remember the questions to ask yourself as you solve real-world problems:



Practice setting up an equation for each of the situations below. Do not solve.

1. The average cost of a school lunch today is $4.35, which is $2.85 more than the average cost of a lunch in 1990. What was the average cost of a school lunch in 1990?

a. What does the variable represent? _____

b. Write an equation: _____

2. Your little sister is too small to stand on the scale. You decide to get on the scale holding her and find your combined weight to be 112 pounds. You know that you weigh 94 pounds. How much does your little sister weigh?

a. What does the variable represent? _____

b. Write an equation: _____

Practice setting up an equation and solving the real-world situations below.

3. The charge for a microwave repair was $81.21, including tax. If the tax was $6.70, then how much was the repair?

I KNOW:	I NEED TO KNOW:
PLAN AND WORK:	SOLUTION:

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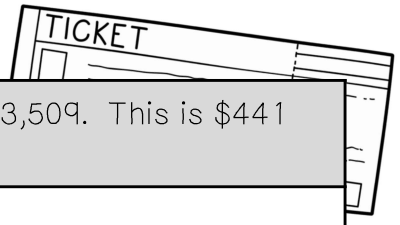

4. According to CBS, the average cost of a Super Bowl ticket in 2010 was $3,509. This is $441 less than the cost of a 2015 ticket. How much was a ticket in 2015?	
I KNOW:	**I NEED TO KNOW:**
PLAN AND WORK:	**SOLUTION:**

5. A fence surrounds two sides of a backyard. The total length of the fence is 86 feet, with the longest portion measuring 51.5 feet. What is the length of the second side of the fence?	
I KNOW:	**I NEED TO KNOW:**
PLAN AND WORK:	**SOLUTION:**

6. A skyscraper in Dubai is 2,722 feet high. A news station antenna in North Dakota measures 659 feet shorter than the Dubai skyscraper. How tall is the news station antenna?	
I KNOW:	**I NEED TO KNOW:**
PLAN AND WORK:	**SOLUTION:**

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Unit: Equations & Inequalities
Homework 2

Name _____

Date _____ Pd _____

ONE-STEP EQUATIONS APPLICATION I

Answer each of the questions below. Be sure to show your thinking.

1. $9.5 + x = 14.2$

2. $x - 10.9 = 16.7$

3. $x - 5 = 17$

4. The average annual precipitation in Berkeley, CA is 26.8 inches. Albany, NY has an average precipitation of 39.4 inches. What is the difference in the two cities' average annual precipitation?

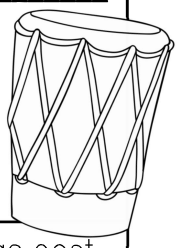
Equation: _____

Solution: _____

5. The high school marching band has 196 members, and 28 of them are a part of the percussion. How many members are in the marching band but not a part of the percussion?

Equation: _____

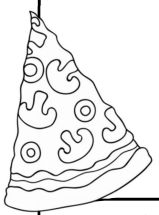
Solution: _____



6. On his lunch break, Crosby purchases a piece of pizza and a salad. The total order is $9.25. If the pizza cost $6.30, then how much was the salad?

Equation: _____

Solution: _____



7. According to CBS, in 2000 the average cost of a World Series ticket was $450. This is $180 more than the cost of a 2007 ticket. How much was a ticket in 2007?

Equation: _____

Solution: _____

8. Which equation has a solution of $x = 15$?

A. $x + 7 = 12$
B. $15 + x = 10$
C. $13 + x = 38$
D. $x + 24 = 39$

9. Liam ran 12 miles total over the weekend. He ran 5.5 miles on Saturday. Which equation can be used to find *m*, the number of miles he ran on Sunday?

A. $12 + 5.5 = m$
B. $5.5m = 12$
C. $m - 5.5 = 12$
D. $5.5 + m = 12$

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Unit: Equations & Inequalities
Mini-Quiz 1

Name _____

Date _____ Pd_____

MINI-QUIZ: ADDING & SUBTRACTING ONE-STEP EQUATIONS

Answer each question and be sure to show all work.

1. $x + 23.4 = 40.7$	2. $18 = x - 9$	5. On his lunch break, Calvin purchases a burger and a drink. The total order is $8.50, of which $1.08 is tax. How much was Calvin's meal before tax? Equation: _____ Solution: _____
3. $34 = 16 + x$	4. $x - 15 = 18$	

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Unit: Equations & Inequalities
Mini-Quiz 1

Name _____

Date _____ Pd_____

MINI-QUIZ: ADDING & SUBTRACTING ONE-STEP EQUATIONS

Answer each question and be sure to show all work.

1. $x + 23.4 = 40.7$	2. $18 = x - 9$	5. On his lunch break, Calvin purchases a burger and a drink. The total order is $8.50, of which $1.08 is tax. How much was Calvin's meal before tax? Equation: _____ Solution: _____
3. $34 = 16 + x$	4. $x - 15 = 18$	

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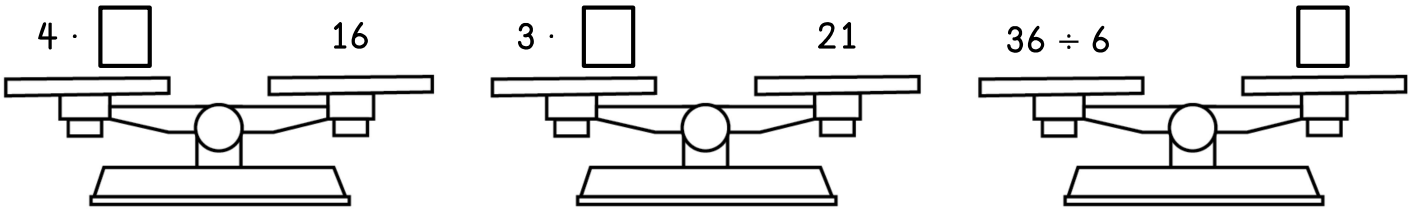
Unit: Equations & Inequalities
Student Handout 3

Name _____
Date _____ Pd _____

ONE-STEP EQUATIONS: MULTIPLICATION & DIVISION

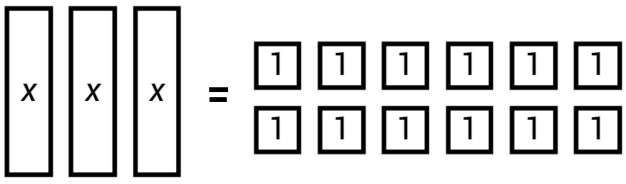
Use your understanding of one-step equations to fill in the missing number to keep the scales balanced.

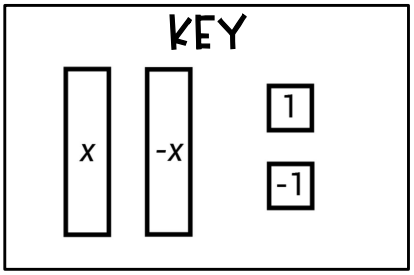


SOLVING ONE-STEP EQUATIONS

- Solving equations allows you to find a missing value, or variable.
  - The _____ must be alone or _____ on one side of the equation.
  - Isolate the variable by using _____ operations.
  - Keep your equation _____.
  - Check your _____ by plugging your answer back into the equation.

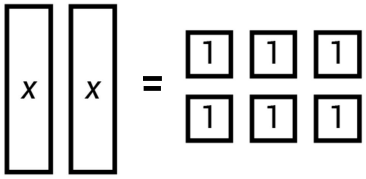
1. Use the key to write and solve the equation represented below.





Equation: _____ Solution: _____

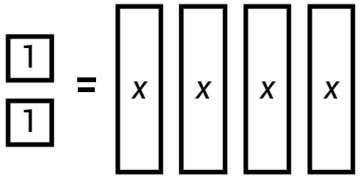
2. Write and solve the equation represented below.



Equation: _____

Solution: _____

3. Write and solve the equation represented below.



Equation: _____

Solution: _____

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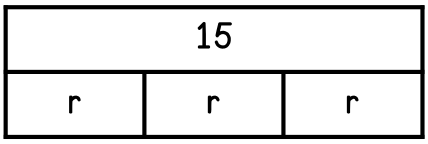
Use your understanding of solving one-step equations to answer the questions below.

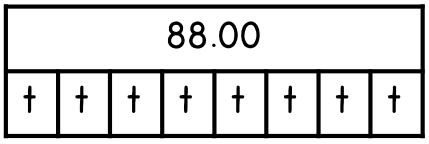
4. Write and solve the equation represented below.



Equation: _____

Solution: _____

5. Write and solve the equation represented below.



Equation: _____

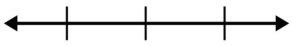
Solution: _____

Solve the following one-step equations. Draw algebra tiles if needed, and then check your work.

6. $3x = 12$

_____

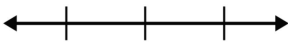
CHECK & GRAPH:



7. $\frac{x}{2} = 16$

_____

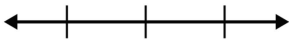
CHECK & GRAPH:



8. $75 = 5x$

_____

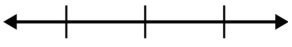
CHECK & GRAPH:



9. $12 = \frac{x}{4}$

_____

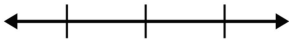
CHECK & GRAPH:



10. $9x = 126$

_____

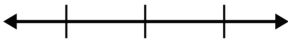
CHECK & GRAPH:



11. $8 = \frac{x}{7}$

_____

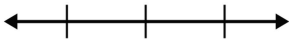
CHECK & GRAPH:



12. $\frac{x}{15} = 7$

_____

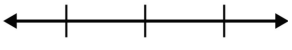
CHECK & GRAPH:



13. $120 = 10x$

_____

CHECK & GRAPH:



Summarize today's lesson:

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Unit: Equations & Inequalities
Homework 3

Name _____

Date _____ Pd _____

ONE-STEP EQUATIONS: MULTIPLICATION & DIVISION

Franco is playing memory with different math cards. Solve for x on each card and record the matching sets below.

A $8x = 72$	B $9 + x = 33$	C $\frac{x}{5} = 12$	D $7 = x - 9$
E $\frac{x}{4} = 8$	F $16 + x = 34$	G $8x = 104$	H $x + 82 = 92$
I $x - 13 = 5$	J $20x = 200$	K $47 = x + 38$	L $\frac{x}{2} = 8$
M $\frac{x}{6} = 4$	N $96 = 3x$	O $x + 48 = 61$	P $x - 32 = 28$

A	B	C	D
x =	x =	x =	x =
E	F	G	H
x =	x =	x =	x =

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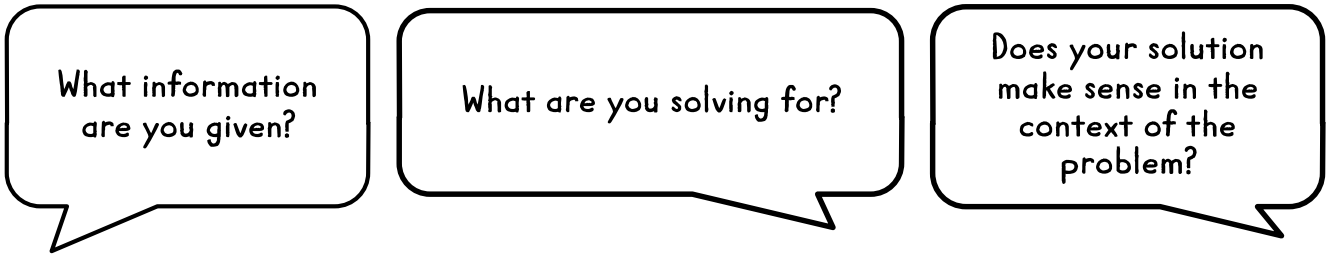
Unit: Equations and Inequalities
Student Handout 4

Name _____

Date _____Pd_____

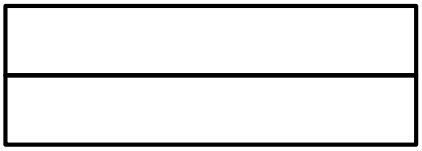
ONE-STEP EQUATIONS APPLICATION II

Remember the questions to ask yourself as you solve real-world problems.



Practice setting up an equation for each of the situations below. Do not solve.

1. In preparation for Thanksgiving dinner, Mrs. Waters orders an 18-pound turkey. She decides that this will be enough to feed 8 people. How many pounds of turkey is she planning per person?



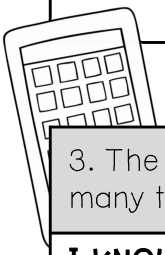
a. What does the variable represent? _____

b. Write an equation: _____

2. A deck of game cards was dealt equally among six players. Each player received 7 cards. How many cards were in the deck?

a. What does the variable represent? _____

b. Write an equation: _____



Practice setting up an equation and solving the real-world situations below.

3. The cell phone bill recorded that Jeremiah sent 532 text messages last week. On average, how many text messages did he send each day?

I KNOW:	I NEED TO KNOW:
PLAN AND WORK:	SOLUTION:

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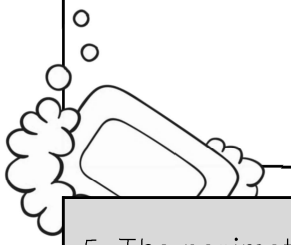
4. On Friday afternoon, Maggie and her two friends washed their neighbor's cars in order to earn some money. They split the payment equally and each walked away with $3.50. How much did the neighbor pay them for washing the cars?

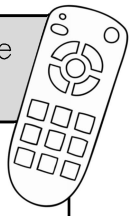
I KNOW:	I NEED TO KNOW:
PLAN AND WORK:	SOLUTION:



5. The perimeter of a square measures 26 cm. What is the length of one side of the square?

I KNOW:	I NEED TO KNOW:
PLAN AND WORK:	SOLUTION:

6. An online streaming subscription is on sale for $41.94 for six months. What is the cost of the streaming subscription for one month?



I KNOW:	I NEED TO KNOW:
PLAN AND WORK:	SOLUTION:

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Unit: Equations & Inequalities
Homework 4

Name _____

Date _____ Pd _____

ONE-STEP EQUATIONS APPLICATION II

Complete the table below by defining a variable, writing an equation, and then solving.

PROBLEM	EQUATION	WORK & SOLUTION
1. Hank and his two friends are attending a concert. They purchase tickets and parking for a total of $129.00. They decide it is easiest to split it evenly. How much does each person owe?	Variable: _____ Equation: _____	
2. A rectangle has an area of 135 ft^2. What is the length if the width is 9 ft?	Variable: _____ Equation: _____	
3. Jose has $34 to spend at the Texas State Fair. If the entrance ticket costs $12, then how much money does Jose have to spend on food and games?	Variable: _____ Equation: _____	
4. Paul rode his bike 79 miles last month. He rode 23 miles during the last half of the month. How many miles did he ride during the first half of the month?	Variable: _____ Equation: _____	
5. A wood beam is divided into four equal segments. Each segment measures 3.5 feet long. What is the length of the wood beam?	Variable: _____ Equation: _____	

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Unit: Equations & Inequalities
Mini-Quiz 2

Name _____

Date _____ Pd_____

MINI-QUIZ: MULTIPLYING & DIVIDING ONE-STEP EQUATIONS

Answer each question. Be sure to show all work.

1. $8x = 63.2$	2. $14 = \frac{x}{3}$	5. On her lunch break, Audrey purchases a meal for herself and her two coworkers. If each meal costs $8.50, then how much was the total bill? Equation: _____ Solution: _____
3. $108 = 6x$	4. $\frac{x}{7} = 14$	

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Unit: Equations & Inequalities
Mini-Quiz 2

Name _____

Date _____ Pd_____

MINI-QUIZ: MULTIPLYING & DIVIDING ONE-STEP EQUATIONS

Answer each question. Be sure to show all work.

1. $8x = 63.2$	2. $14 = \frac{x}{3}$	5. On her lunch break, Audrey purchases a meal for herself and her two coworkers. If each meal costs $8.50, then how much was the total bill? Equation: _____ Solution: _____
3. $108 = 6x$	4. $\frac{x}{7} = 14$	

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Unit: Equations and Inequalities
Student Handout 5

Name _____

Date _____ Pd_____

INDEPENDENT AND DEPENDENT VARIABLES

INDEPENDENT VARIABLES	• The independent variable is the _____ variable, or the _____. • It can be represented by the _____ and is sometimes called the _____ . Ex: time, number of items
DEPENDENT VARIABLES	• The dependent variable is the _____ variable. It is dependent on the independent variable. • It can be represented by the _____ and _____ based on the independent variable. Ex: total cost ($)

Read each situation below and determine which is the independent and dependent variable.

1. Jameson runs *m* miles and burns *c* number of calories. Independent: _____ Dependent: _____	2. The more hours, *h*, Brady practices, the better his test grade, *g*, will be. Independent: _____ Dependent: _____
3. Michael pays $8.99 per month for his streaming subscription. Independent: _____ Dependent: _____	4. A car travels 60 mph. Independent: _____ Dependent: _____
5. Each slice of pizza costs $6.00 at the football game. Independent: _____ Dependent: _____	6. The later Jessie stays up at night, the sleepier she is at school. Independent: _____ Dependent: _____

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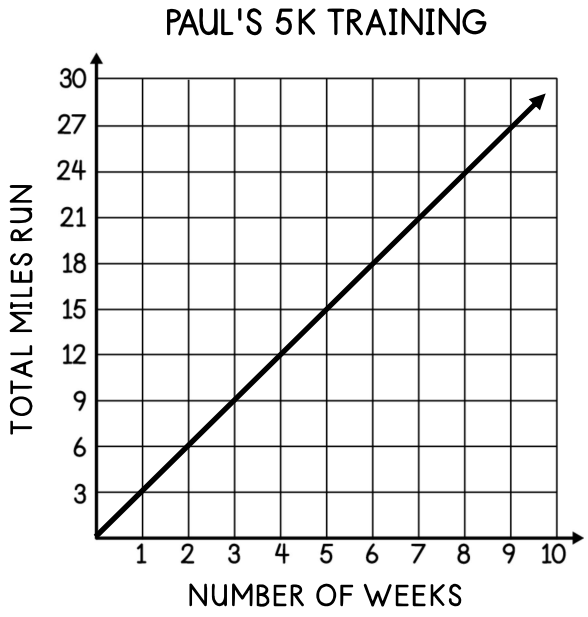
_____ and _____ can also display independent and dependent quantities.

7. Use the graph below to determine the independent and dependent quantities.



a. What is the independent variable?

b. What is the dependent variable?

c. List the independent quantities:

d. List the dependent quantities:

e. Write an equation to represent Paul's 5K training.

For questions 8-9, record the independent and dependent variables from each table. Then, write an equation to represent the relationship between the variables.

8.

HOURS (H)	2	4	6	8
MILES (M)	130	260	390	520

Independent: _____

Dependent: _____

Equation: _____

9.

MONTHS (M)	1	2	3	4
TOTAL COST (C)	3.99	7.98	11.97	15.96

Independent: _____

Dependent: _____

Equation: _____

List the independent and dependent quantities from each table.

10.

# OF MINUTES (M)	TOTAL WORDS (W)
3	165
6	330
9	495
12	660

Independent: _____

Dependent: _____

11.

HOURS (H)	INCHES OF RAIN (R)
1	0.75
2	1.50
3	2.25
4	3.00

Independent: _____

Dependent: _____

12.

WEEKS (W)	TOTAL COST (C)
16	56
8	28
4	14
12	42

Independent: _____

Dependent: _____

Summarize today's lesson:

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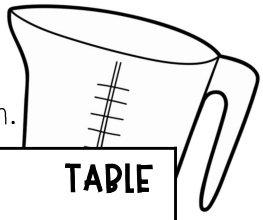
Unit: Equations & Inequalities
Homework 5

Name _____

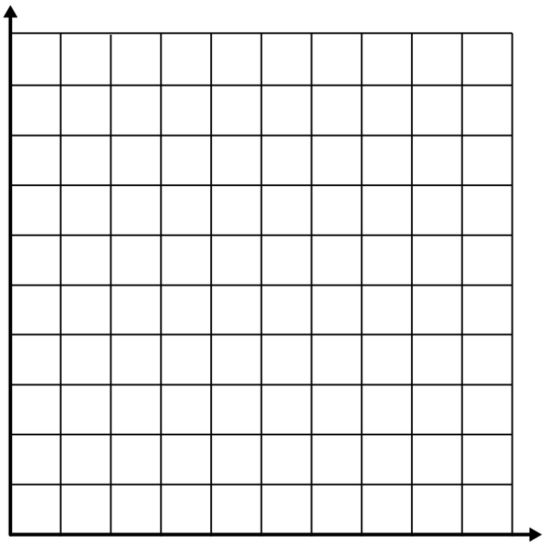
Date _____ Pd_____

INDEPENDENT AND DEPENDENT VARIABLES



Complete the missing information in the chart below using the given verbal description.

GRAPH



TABLE

	PROCESS	

EQUATION

VERBAL DESCRIPTION

A baker can produce 40 cupcakes (c) every hour (h).

VARIABLES

Independent variable:

Dependent variable:

Use the information from the diagram above to answer the following questions about independent and dependent variables.

1. Write a sentence to explain the independent and dependent variables.	2. How many hours does it take to bake 280 cupcakes?
3. If the baker continued at the same rate, then how many cupcakes would she be able to make in 12.5 hours?	4. What does the ordered pair (5, 200) represent in this situation?

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Unit: Equations & Inequalities
Quiz 1

Name _____

Date _____ Pd _____

QUIZ: ONE-STEP EQUATIONS

Solve the equations below. Be sure to check your work.

1. $x + 18 = 63$

2. $x + 9.5 = 35$

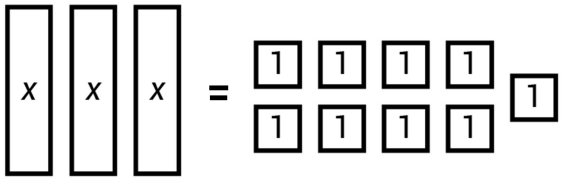
3. $\frac{x}{15} = 8$

4. $45 = x - 20$

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

5. Which solution satisfies the model below?



A. $x = 3$
B. $x = 6$
C. $x = 9$
D. $x = 27$

6. Which equation is true when $x = 3$?

A. $8x = 28$

B. $x - 19 = 16$

C. $28 + x = 25$

D. $\frac{x}{3} = 1$

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7. Which equation has a solution of $x = \frac{3}{4}$?

A. $6x = 15$

B. $x + \frac{3}{4} = 1\frac{1}{2}$

C. $x + 5.25 = 7$

D. $6x = 8$

8. Miles can type 35 words per minute. Let w represent the number of words and m represent the minutes. Which equation best represents this situation?

A. $35w = m$

B. $35 + w = m$

C. $35m = w$

D. $\frac{m}{35} = w$

9. In gym class, students were asked to form six equal groups. If there were 18 students in each group, then how many total students were there?

10. The high school dance team has 88 members, and 24 of them also hold a position in the student council. How many members are on the dance team but not in student council?

11. Taylor solves the equation $6x = 51$ and determines that $x = 7.5$. Justify whether or not he is correct in solving the equation.

_____

_____

_____

_____

12. The sum of the measures of two angles is 127.6°. One angle has a measure of 63°. What is the measure of the second angle?

A. 121.5°

B. 64.6°

C. 188.6°

D. 2.09°

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Unit: Equations & Inequalities
Student Handout 6

Name _____
Date _____ Pd _____

INTRO TO INEQUALITIES

An equation uses an _____ sign to show that both sides are _____ .

An _____ shows that both sides may _____ be equal.

GREATER THAN	GREATER THAN OR EQUAL TO	LESS THAN	LESS THAN OR EQUAL TO

Use an inequality symbol to make each mathematical statement true.

4 ___ 9	0.5 ___ 0.45	3 ___ 6	1.04 ___ 1.4

INEQUALITIES

- Use the _____ as the starting point when reading an inequality statement.

Ex: $6 \leq x$ can be rewritten as _____

- A value can be substituted to determine if the inequality is correct.

Ex: $x + 6 > 11$, if $x = 5$ $7x < 45$, if $x = 6$

Determine whether the given value makes a true statement.

1. $k + 8 \geq 19$, if $k = 11$	2. $12 > f$, if $f = 3$	3. $c - 12 > 30$, if $c = 13$
4. $16 < b - 8$, if $b = 22$	5. $\frac{x}{12} \leq 3$, if $x = 48$	6. $10 + p \leq 20$, if $p = 5$

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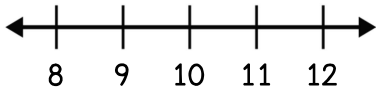
All the shaded numbers are true, or part of the _____.

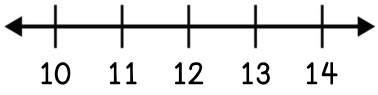
GREATER THAN	GREATER THAN OR EQUAL TO	LESS THAN	LESS THAN OR EQUAL TO
⟷	⟷	⟷	⟷

Practice graphing the following inequalities.

7. $k > 11$

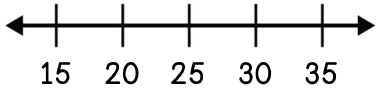


8. $12 \geq f$

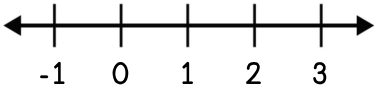


9. $d < 6$

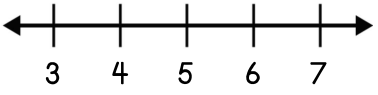
10. $c < 25$



11. $0 \leq b$

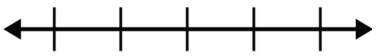


12. $x \geq 4.5$

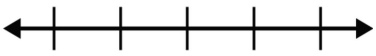


Using each verbal expression below, write and graph an inequality.

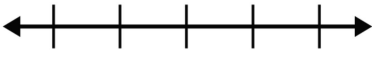
13. The McDonald family spends no more than $150 for groceries each week.

_____ 

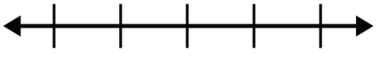
14. Jerod earns at least $10 when mowing lawns.

_____ 

15. Jazlynn must score higher than a 92 on her science test to make an A on her report card.

_____ 

16. It takes Alex fewer than 15 minutes to walk to school.

_____ 

17. Callie says that the graph for the inequality $5 \geq w$ will be the same as the graph for the inequality $w \geq 5$. Do you agree or disagree? Justify your reasoning.

_____

_____

_____

Summarize today's lesson:

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Unit: Equations & Inequalities
Homework 6

Name _____

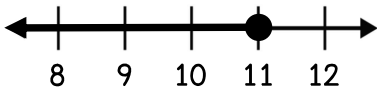
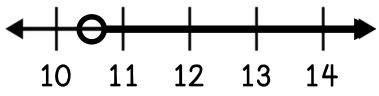
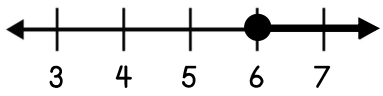
Date _____ Pd _____

INTRO TO INEQUALITIES

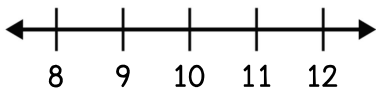
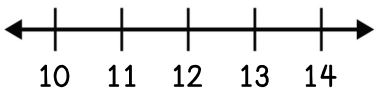
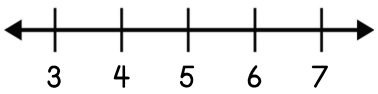
Substitute each variable to determine whether the inequality statement is true or false.

1. $k + 12 \geq 20$, if $k = 15$	2. $16 > f$, if $f = 17$	3. $9 > d$, if $d = 3$

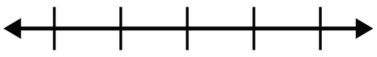
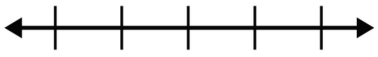
Write an inequality for each solution set graphed below.

4. _____ 	5. _____ 	6. _____ 

Practice graphing the following inequalities.

7. $k \leq 8$ 	8. $13.5 \geq f$ 	9. $d < 4$ 

Based on each verbal expression below, write and graph an inequality.

10. The Parkland Zoo has a maximum capacity of 350 visitors, *v*.  _____	11. Trina must spend at least 45 minutes, *m*, studying for her test.  _____

12. Mrs. Galloway asked her students to write an inequality statement and a value that makes the inequality true. Circle the name of the student who did this correctly.

JEB	ALIZA	ANGELO
$a - 12 > 10$, if $a = 22$	$35 > 4x$, if $x = 7$	$\frac{x}{5} \geq 10$, if $x = 15$

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Unit: Equations & Inequalities
Student Handout 7

Name _____

Date _____ Pd _____

SOLVING INEQUALITIES

SOLVING ONE-STEP INEQUALITIES

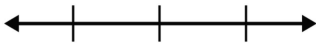
- Inequalities can be solved by following the same steps as equations.
  - The _____ must be alone or _____ on one side of the inequality.
  - Isolate the variable by using _____ or opposite operations.
  - Whatever you do to one side, you must do to the _____.

Solve each inequality, check your answer, and then graph the solution.

1. $n + 5 \leq 16$

_____

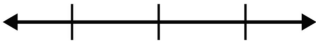
CHECK & GRAPH:



2. $c - 9 > 14$

_____

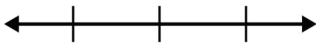
CHECK & GRAPH:



3. $12g < 48$

_____

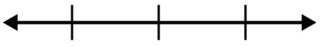
CHECK & GRAPH:



4. $49 \geq 7g$

_____

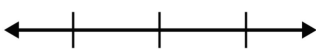
CHECK & GRAPH:



5. $\frac{p}{3} > 9$

_____

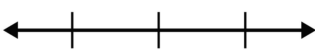
CHECK & GRAPH:



6. $33 \geq x + 19$

_____

CHECK & GRAPH:



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Solve the inequalities below for practice. Roll a pair of dice and find the sum of the two numbers showing. Solve that problem.

	SOLVE	SOLUTION
2	$7x \geq 35$	
3	$x + 6.8 < 11.2$	
4	$x - 5 > 16.7$	
5	$x + 14 \leq 16$	
6	$8 \geq x - 3$	
7	$7 \leq 2x$	
8	$\frac{x}{8} > 3$	
9	$\frac{x}{2} < 3.5$	
10	$18 < x + 11$	
11	$6x \geq 108$	
12	$x - 7 \leq 45$	

SHOW WORK HERE:

Use your understanding of solving inequalities to answer the questions below.

7. Kevin was asked to place a check mark next to any inequality in which $x = 5$ is a true statement. Check over his work and correct any mistakes.

QUESTION #1	QUESTION #2	QUESTION #3
✓ $25 < 5x$	✓ $x - 3 \leq 8$	✓ $30 \leq 6x$

8. Each of the students below made a statement about the inequality, $72 > 8x$. Which student(s) made a true statement?

CASSIE
You can rewrite the problem to be $8x > 72$.

DON
The solution will be $x > 9$.

JOSIE
5 is part of the solution set.

Summarize today's lesson:

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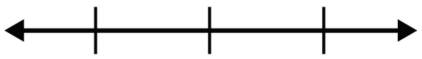
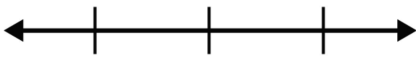
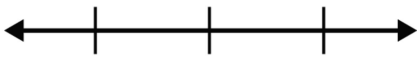
Unit: Equations & Inequalities
Homework 7

Name _____

Date _____ Pd _____

SOLVING INEQUALITIES

Solve the following one-step inequalities, check your work, and graph the solution.

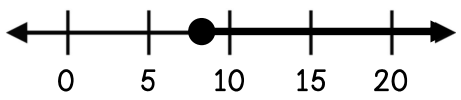
1.	2.	3.
$3x < 54$	$\frac{x}{4} \geq 11$	$x - 7 > 29$
_____	_____	_____
✓ CHECK:	✓ CHECK:	✓ CHECK:
		

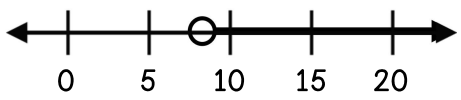
Use your understanding of inequalities to answer the questions below.

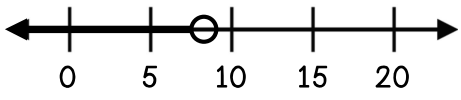
4. Which inequality is true when $x = 4$?

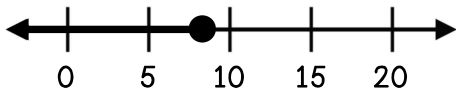
A. $x + 5 \leq 3$ B. $9x > 36$ C. $\frac{x}{2} < 3$ D. $18 \leq x - 8$

5. Jasmine solves the equation $15x > 120$. Which number line below represents the solution set?

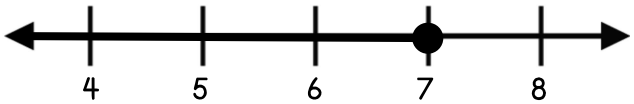
A. 

B. 

C. 

D. 

6. The number line below represents the solution set to which inequality?



A. $16 + x < 23$ B. $5x \geq 35$

C. $x - 3 \leq 4$ D. $\frac{x}{2} > 3.5$

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Unit: Equations & Inequalities
Student Handout 8

Name _____

Date _____Pd_____

APPLICATION OF INEQUALITIES

Remember the questions to ask yourself as you solve real-world problems.

What information are you given?

What are you solving for?

Does your solution make sense in the context of the problem?

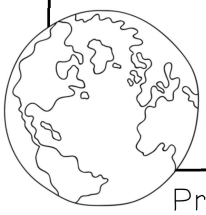
Practice setting up an inequality for each of the situations below. Do not solve.

1. The school football team is selling raffle tickets for a fundraiser. It costs $155 to print the tickets, and they would like to make at least a $2,500 profit. How much money do they need to raise to cover the printing costs and meet their goal?

a. What does the variable represent? _____

b. Write an inequality: _____

2. Westfield Junior High is attending a field trip to the planetarium. Students must be placed into groups of 15 and the planetarium can only accept up to 18 groups per day. How many students can attend the planetarium field trip each day?



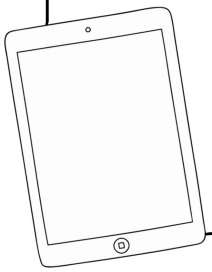
a. What does the variable represent? _____

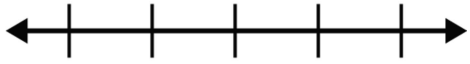
b. Write an inequality: _____

Practice setting up an equation and solving the real-world situations below.

3. Francis is saving money for a new tablet. She needs to save at least $200 and has decided to save $10 per week. How many weeks will it be before she can purchase the new tablet?

I KNOW:	I NEED TO KNOW:
PLAN AND WORK:	SOLUTION:





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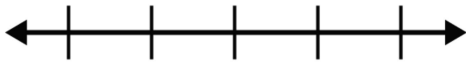
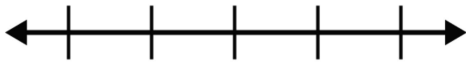
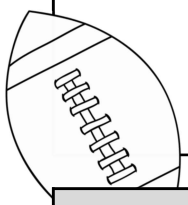
4. Farmer Fran would like to build a chicken coop. She determines that the area of the coop must be a minimum of 300 ft^2. If the length of the coop is 12 feet, then how wide does the chicken coop need to be? Use A=bh and sketch a diagram to help.

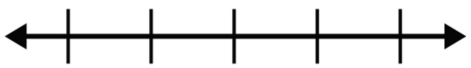
I KNOW:	I NEED TO KNOW:
PLAN AND WORK:	SOLUTION: 

5. Sam is purchasing flags for his flag football team and must spend less than $55.00. If each set costs $5.50, then how many flags can he purchase?

I KNOW:	I NEED TO KNOW:
PLAN AND WORK:	SOLUTION: 



6. It costs $0.30 per minute to make an international phone call. How many minutes could a caller talk if they could spend $21.00 at most on the call?

I KNOW:	I NEED TO KNOW:
PLAN AND WORK:	SOLUTION: 

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Unit: Equations & Inequalities
Homework 8

Name _____

Date _____Pd_____

APPLICATION OF INEQUALITIES

Gabby and her four sisters are going out to eat. Their parents gave each of them a $10.00 bill. Use the menu to help write and solve an inequality for each scenario.

CALIFORNIA CAFE

all prices shown include tax

Turkey Wrap	$6.50	Soft Drink	$1.55
Grilled Cheese	$5.49	Ice Cream	$2.80
Cobb Salad	$8.95	Chips	$1.29
Cheese Pizza	$7.25	French Fries	$1.79

1. Gabby and her four sisters combine the money their parents gave them. What is the maximum number of pizzas they can order to stay within their budget?	2. How many orders of french fries can the girls purchase if they want to spend less than $8.00 on french fries?
3. If Gabby knows she wants to order a soft drink, then what is the maximum amount of money she can spend on food to not exceed her $10.00 budget?	4. How many servings of ice cream can the girls buy if they want to spend no more than $10.00 on ice cream?
5. California Cafe has a goal of earning $130 on turkey wraps each day. How many turkey wraps do they need to sell in order to meet or exceed their goal?	6. California Cafe has a maximum capacity of 45 customers. If there are currently 27 customers in the cafe, how many more customers can they seat?

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Unit: Equations & Inequalities Review

Name _____

Date _____ Pd _____

EQUATIONS & INEQUALITIES UNIT STUDY GUIDE

Solve each of the problems below. These represent the types of questions on your test. Be sure to ask questions if you need more help with a topic.

I CAN DETERMINE IF A VALUE MAKES AN EQUATION OR AN INEQUALITY TRUE.

1. $6x = 108$, if $x = 18$	2. $x - 19 \leq 81$, if $x = 110$	3. $x + 6 > 24$, if $x = 18$

I CAN SOLVE EQUATIONS.

4. $2.1x = 23.1$	5. $x + 54 = 76$	6. $45 = 12 + x$
7. $x - 10.6 = 16.9$	8. $\frac{x}{12} = 7.5$	9. $144 = 9x$
10. $\frac{x}{8} = 14$	11. $28 = 3.5x$	

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I CAN WRITE REAL-WORLD EQUATIONS.

12. Xander collected four times as many stamps as his cousin. If Xander collected 60 stamps, then how many did his cousin collect?

Variable: _____

Equation: _____

13. Lucy has a coin collection of quarters from different states. The value of her coin collection is $9.50. How many quarters does she have in her collection?

Variable: _____

Equation: _____

I CAN SOLVE REAL-WORLD EQUATIONS.

14. Micah and his brother found some cash at a bus stop. They split the money evenly, each getting $16. How much money did they find?

15. A large box of cereal costs $3.50. How many boxes can you purchase with $28.00?

16. Jada swam 200 meters more than Molly. Jada swam a total of 800 meters. How many meters did Molly swim?

17. A recipe calls for 2.5 cups of sugar. You have already added 0.75 cups. How many more cups of sugar do you need to add?

18. Jefferson High School has an enrollment of 1,864 students. In May, 564 students will graduate. How many students will be enrolled after graduation?

19. Mrs. Turner baked 120 cookies. She decided to give $\frac{1}{6}$ of them to her students. How many cookies did she take to her students?

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I CAN DETERMINE IF k=8 IS PART OF THE SOLUTION SET.

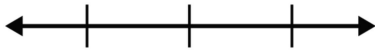
20. $5k < 39$

21. $\frac{k}{2} \leq 4$

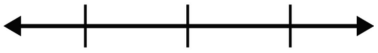
22. $k - 6 > 2$

I CAN GRAPH INEQUALITIES ON THE NUMBER LINE.

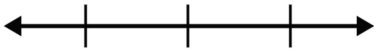
23. $x \geq 6$



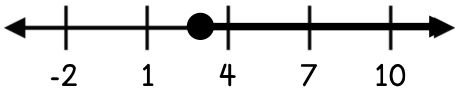
24. $15.5 > x$



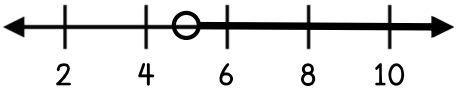
25. $x \leq 3$



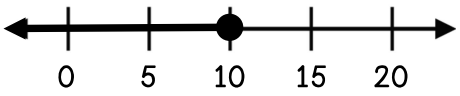
26. Write an inequality to describe the number line below.



27. Write an inequality to describe the number line below.

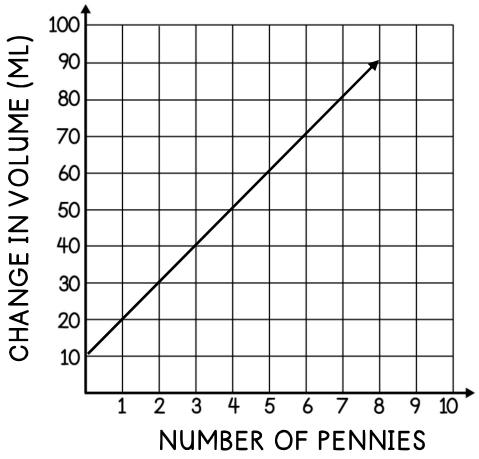


28. Write an inequality to describe the number line below.



I CAN IDENTIFY INDEPENDENT & DEPENDENT QUANTITIES FROM TABLES & GRAPHS.

29. Complete the statements below.



The _____ depends on the _____, which is the independent variable.

30. Complete the statements below.

AMOUNT OF MONEY BEFORE PURCHASE (B)	AMOUNT OF MONEY AFTER $5.50 PURCHASE (A)
25	19.50
40	34.50
18	12.50
12	6.50
36	30.50

The _____ depends on the _____, which is the independent variable.

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I CAN WRITE REAL-WORLD INEQUALITIES.

31. Missy is getting married and addressing invitations. She has at least 140 envelopes and has addressed 26 of them. Write an inequality that describes how many more invitations must be addressed.

32. In order to ride a roller coaster, a rider must be greater than 48 inches tall. Right now, Jeff is 45 inches tall. Write an inequality that describes how many more inches Jeff must grow in order to ride the roller coaster.

I CAN SOLVE REAL-WORLD INEQUALITIES.

33. Sam can join a gym for $25.00 per month or for a flat rate of $500.00. What is the minimum number of months Sam would have to be a gym member to make the flat rate a better choice?

34. Max is creating a playlist and can have at most 180 minutes of music. He currently has 45 minutes. How many more minutes of music could Max include in the playlist?

35. A lake is rising at a rate of 4 inches per hour. If the lake rises more than 36 inches, then it will cause flood damage. How long can the lake rise at this rate without causing flood damage?

36. Belinda's Bakery profits $8.00 on each box of a dozen cookies. Belinda would like to profit at least $304 per day. How many boxes will Belinda need to sell each day?

37. The area of a rectangular dog run can be no more than 120 square feet. The length is 15 feet. What is the width of the dog run?

38. Hunter has basketball practice five days a week. He practices a minimum of 450 minutes per week. On average how many minutes is each practice?

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Unit: Equations & Inequalities Test

Name _____

Date _____ Pd _____

EQUATIONS & INEQUALITIES UNIT TEST

Solve the problems below. Be sure to show your thinking.

1. Which inequality is true when $x = 7$?

A. $x + 6 \geq 18$
B. $x - 6 > 18$
C. $11 + x < 18$
D. $11 + x \leq 18$

2. Which of the following makes the equation true?

$$\frac{b}{4} = 16$$

A. 64
B. 4
C. 16
D. 8

3. Solve for m.

$$m + 7 \geq 20$$

_____

4. Solve for r.

$$r - 4.5 < 11$$

_____

5. A case of 12 boxes of macaroni and cheese can be purchased for $18.00. How much is each box of macaroni and cheese?

_____

6. Solve for j.

$$j - 18 = 43$$

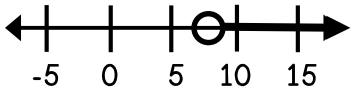
_____

Match the inequalities to the correct graph.

_____ 7. $7.5 < x$

_____ 8. $x \leq 10$

A.



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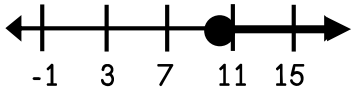
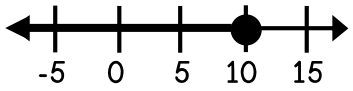
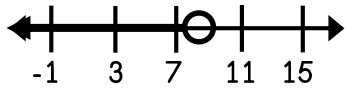


C.



D.



9. Which description below describes the equation:

$$\frac{x}{4} = 55$$

A. Ali divided *x* mugs into 55 boxes, with 4 mugs in each box.
B. Ali divided 55 mugs into 4 boxes, with *x* mugs in each box.
C. Ali divided *x* mugs into 55 boxes, with 4 mugs broken.
D. Ali divided 4 mugs into *x* boxes, with 55 mugs in each box.

10. Madeline must earn at least 80 points for her science fair project. So far on the rubric she has 64 points. Write and solve an inequality to show how many points Madeline needs.

_____

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Solve the problems below. Be sure to show your thinking.

11. Jaxon must sell at least 49 rolls of wrapping paper to support the robotics club fundraiser. He has already sold 24 rolls of wrapping paper. Which inequality best represents the number of rolls of wrapping paper Jaxon still needs to sell?

A. $x + 24 > 49$ B. $x + 24 \leq 49$

C. $x + 24 < 49$ D. $x + 24 \geq 49$

12. In the table below, which best represents the independent variable?

# OF DAYS	1	2	3	4	5
TOTAL SALES	8	16	24	32	40

A. the number of sales
B. the number of days
C. the total cost
D. the amount of time it takes to make a sale

13. Each soda costs $4.50 at a baseball game. Which of the following represents the dependent variable?

A. $4.50
B. the number of sodas
C. the total cost
D. the total number of sodas sold at the game

14. The summer sports training camp has a maximum capacity of 250 students. If 85 have preregistered, then how many students can still participate? Write and solve an inequality.

_____

15. The sum of the measures of two angles is 107.3°. One angle has a measure of 51°. What is the measure of the second angle?

_____

16. In gym class students were asked to form nine equal groups. If there were 16 students in each group, then how many total students were there?

_____

17. Solve for g.

$$\frac{g}{4} > 12$$

_____

18. Miles can type 60 words per minute. Let w represent the total number of words Miles can type and m represent the number of minutes he types. Which equation best represents this?

A. $60 + w = m$ B. $60w = m$

C. $\frac{m}{60} = w$ D. $60m = w$

19. If $x = 9$, then which inequality is true?

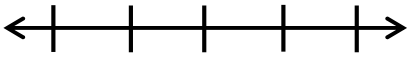
A. $2x > 16$

B. $x + 5 \leq 2$

C. $2x < 5$

D. $x - 2 \geq 16$

20. The Weston family spends a maximum of $50.00 per month on entertainment. Write and graph an inequality to represent this.



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