



8th Grade

Week of:

APRIL 6TH

WICHITA PUBLIC SCHOOLS





5th, 6th, 7th and 8th Grades

Your child should spend up to 90 minutes over the course of each day on this packet. Consider other family-friendly activities during the day such as:

Journal your thoughts about current situation in our community	Find an area in your home that is cozy and take a moment and focus on your breathing. 3 deep breathes	Find a Yoga video and participate as a family.	Help make a meal for the family.
Listen to a free audio story at stories.audible.com	Start your coding journey at code.org	Observe and discuss nature while watching an animal at explore.org/livecams	Write a letter or text to a friend to encourage them.

**All activities are optional. Parents/Guardians please practice responsibility, safety, and supervision.*

For students with an Individualized Education Program (IEP) who need additional support, Parents/Guardians can refer to the Specialized Instruction and Supports webpage, contact their child’s IEP manager, and/or speak to the special education provider when you are contacted by them. Contact the IEP manager by emailing them directly or by contacting the school. The Specialized Instruction and Supports webpage can be accessed by clicking [HERE](#) or by navigating in a web browser to <https://www.usd259.org/Page/17540>

WICHITA PUBLIC SCHOOLS
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 316-973-4443
 MARCH 30 – MAY 21, 2020
 MONDAY – FRIDAY
 11:00 AM – 1:00 PM **ONLY**

For Multilingual Education Services (MES) support,
 please call (316) 866-8000 (Spanish and Proprio) or (316) 866-8003 (Vietnamese).

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Grade 8 English Language Arts: April 6 – 10, 2020

Theme: Invention

Essential Question: Are inventions realized through inspiration or perspiration?

Genre: Argument

Grade 8 Unit 5 Invention: Are inventions realized through inspiration or perspiration?

Week 2: April 6-10	pp. 438 – 439 p. 440 p. 441 p. 442 - 445	<ul style="list-style-type: none">● Unit introduction.● Set learning goals.● Vocabulary● Read and complete the activities.
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8th Grade Unit 5 *Invention*

Daily Planning Guide/Checklist/Additional Support

Monday, March 6

- _____ Look through information on pages 438 – 439.
- _____ Rate yourself on the unit goals page 440. This is where you are right now before beginning the unit.
- _____ Begin working on vocabulary page 441.

Tuesday, March 7

- _____ Complete the vocabulary section on page 441.
- _____ Read (or have read aloud) pages 442 and 443.
- _____ Complete the Word Network at the bottom of page 443.

Wednesday, March 8

- _____ Re-read (or have read aloud) pages 442 and 443.
- _____ Work on writing a summary as shown on page 444.

Thursday, March 9

- _____ Continue and complete the written summary.
- _____ Begin working on Quick Write – jot down notes of inventions you feel have had the greatest impact. Why are they important? Page 445.

Friday, March 10

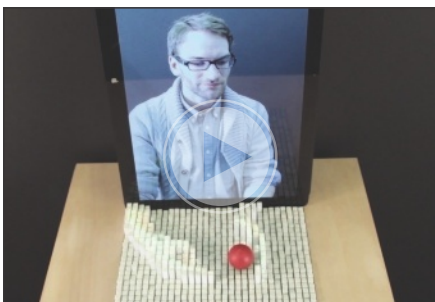
- _____ Complete the Evidence Log on page 445.
- _____ Summarize your point of view (1 sentence) from the Evidence Log.
- _____ Congratulations - you've completed Week 2 and you're awesome!!!

Invention


Building something out of nothing is hard work.



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Amazing Technology Invented By
MIT - Tangible Media

 **Discuss It** What are some ways in which this invention might have failed?
Write your response before sharing your ideas.



ESSENTIAL QUESTION:

Are inventions realized through inspiration or perspiration?

LAUNCH TEXT ARGUMENT MODEL
Inspiration Is Overrated!



WHOLE-CLASS LEARNING

ANCHOR TEXT: NOVEL EXCERPT

Uncle Marcos

from *The House of the Spirits*

Isabel Allende, translated by Magda Bogin

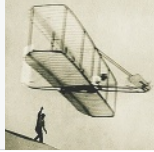


ANCHOR TEXT: ESSAY

To Fly

from *Space Chronicles*
Neil deGrasse Tyson

► MEDIA CONNECTION:
When I Look Up

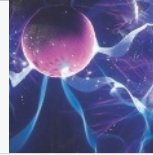


SMALL-GROUP LEARNING

BIOGRAPHY

Nikola Tesla:
The Greatest Inventor of All?

Vicky Baez

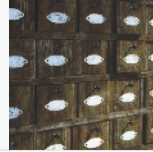


COMPARE

NOVEL EXCERPT

from *The Invention of Everything Else*

Samatha Hunt



SCIENCE ARTICLE

25 Years Later,
Hubble Sees Beyond Troubled Start

Dennis Overbye



MEDIA: VIDEO

Sounds of a Glass Armonica



INDEPENDENT LEARNING

WEB ARTICLE

Ada Lovelace:
A Science Legend

James Essinger



WEB ARTICLE

Fermented Cow Dung Air Freshener Wins Two Students Top Science Prize

Kimberley Mok



NEWS ARTICLE

Scientists Build Robot That Runs, Call It "Cheetah"

Rodrique Ngowi



NOVEL EXCERPT

from *The Time Machine*

H. G. Wells



MYTH

Icarus and Daedalus

retold by Josephine Preston Peabody



PERFORMANCE TASK

WRITING FOCUS:
Write an Argument

PERFORMANCE TASK

SPEAKING AND LISTENING FOCUS:
Conduct a Debate

PERFORMANCE-BASED ASSESSMENT PREP

Review Evidence for an Argument

PERFORMANCE-BASED ASSESSMENT

Argument: Essay and Speech

PROMPT:

Which invention described in this unit has had the biggest impact on humanity?

Unit Goals

Throughout this unit, you will deepen your perspective about creativity and invention by reading, writing, speaking, listening, and presenting. These goals will help you succeed on the Unit Performance-Based Assessment.

Rate how well you meet these goals right now. You will revisit your ratings later when you reflect on your growth during this unit.

SCALE	1	2	3	4	5
	NOT AT ALL WELL	NOT VERY WELL	SOMEWHAT WELL	VERY WELL	EXTREMELY WELL
READING GOALS					
	1	2	3	4	5
	<ul style="list-style-type: none"> Read a variety of texts to gain the knowledge and insight needed to write about inspiration and invention. 				
	<ul style="list-style-type: none"> Expand your knowledge and use of academic and concept vocabulary. 				
WRITING AND RESEARCH GOALS					
	1	2	3	4	5
	<ul style="list-style-type: none"> Write an argumentative essay in which you effectively incorporate the key elements of an argument. 				
	<ul style="list-style-type: none"> Conduct research projects of various lengths to explore a topic and clarify meaning. 				
LANGUAGE GOAL					
	1	2	3	4	5
	<ul style="list-style-type: none"> Improve your writing by using gerund phrases and participial phrases to combine short, choppy sentences. 				
SPEAKING AND LISTENING GOALS					
	1	2	3	4	5
	<ul style="list-style-type: none"> Collaborate with your team to build on the ideas of others, develop consensus, and communicate. 				
	<ul style="list-style-type: none"> Integrate audio, visuals, and text in presentations. 				

STANDARDS

Language

Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Academic Vocabulary: Argument

Understanding and using academic terms can help you read, write, and speak with precision and clarity. Here are five academic words that will be useful in this unit as you analyze and write arguments.

Complete the chart.

1. Review each word, its root, and the mentor sentences.
2. Use the information and your own knowledge to predict the meaning of each word.
3. For each word, list at least two related words.
4. Refer to the dictionary or other resources if needed.

TIP

FOLLOW THROUGH

Study the words in this chart, and mark them or their forms wherever they appear in the unit.

WORD	MENTOR SENTENCES	PREDICT MEANING	RELATED WORDS
opponent ROOT: -pon- "place"; "put"	1. He managed to win the game against a strong <i>opponent</i> . 2. I respect her even though she is my <i>opponent</i> .		<i>postpone</i> ; <i>component</i>
position ROOT: -pos- "place"; "put"	1. His <i>position</i> that everyone receive a different amount angered the other children. 2. Our debate team took the <i>position</i> that cellphone use should be banned from classrooms.		
contradict ROOT: -dic- "speak"; "assert"	1. Even though Abby knew Kyle was wrong, she did not <i>contradict</i> him. 2. The results of this study <i>contradict</i> the findings from earlier studies.		
legitimate ROOT: -leg- "law"	1. It's a <i>legitimate</i> argument, but they pretended not to hear it. 2. The judge determined that the oldest son was the <i>legitimate</i> heir to the fortune.		
dissent ROOT: -sent- "feel"	1. The proposal caused <i>dissent</i> because the members were against it. 2. The whole family wanted to go to the beach, so there was no <i>dissent</i> this time.		

LAUNCH TEXT | ARGUMENT MODEL

This text is an example of an **argument**, a type of writing in which an author states and defends a position on a topic. This is the type of writing you will develop in the Performance-Based Assessment at the end of the unit.

As you read, look at the way the writer builds a case. Mark the text to answer this question: What is the writer's position, and how is it supported?

Inspiration Is Overrated!

NOTES

- 1 **H**ere's something that isn't on everyone's shopping list: a coffee mug that irons clothes. It's just one of a multitude of inventions that most of us have never heard of. Each of those forgotten contraptions was probably someone's bright idea—a flash of inspiration experienced while walking in the woods, an idea guaranteed to change the world. So what went wrong?
- 2 Some inventions are so much a part of everyday life we forget that they started off as someone's bright idea. Others are long forgotten or remembered only as being colossal duds.
- 3 For every invention that actually makes it to production, there are thousands that don't. The line between the bizarre and the ingenious is often very thin. History is filled with examples of new inventions that supporters thought would be transformational but turned out to be just minor fads.
- 4 Experts say that the odds are stacked astronomically against inventors, and that no amount of marketing can turn a situation around. The number of failed inventions reinforces how hard it is for inventors to make the leap from idea to marketable product.
- 5 Let's look at some figures. According to the U.S. Patent and Trademark Office, there are about 1.5 million products that have patents. Perhaps 3,000 of those make money. A noted business magazine states that only one in 5,000 inventions succeeds in the marketplace. This estimate is ten times lower than the one from the Trademark Office!

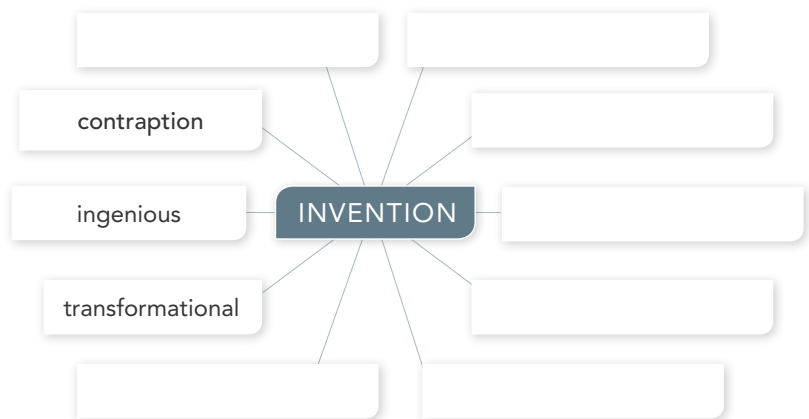


- 6 What explains the high rate of failure? Is there something the inventors failed to see? The answer is *yes*: They failed to see how much work is involved in getting a product off the ground. Someone once said that genius is one percent inspiration and ninety-nine percent perspiration. That is true for invention, too. Hard work is more important than a good idea.
- 7 Developing something new that actually works—and that people want—can take years. After an inventor has a brilliant idea, the hard part begins. A working model must be developed and tested. If the results are poor or inconsistent, the project may have to be rethought—or even scrapped. A good idea is necessary, but what comes after is more important.
- 8 When a working model is finally developed, the inventor must conduct what is called a “search for prior art.” That means checking to make sure that there isn’t a similar or even identical invention around. Sometimes it seems as if all the good ideas have been taken! That means more work.
- 9 When everything is ready to go, the inventor has to apply for a patent—a legal right to ownership of the invention. It’s like a contract, and every single word has legal consequences. Many inventors hire patent lawyers to make sure their interests are protected. That means more work.
- 10 It’s a common mistake to think that you can sell an idea. You can’t. You can only sell an invention. Turning an idea into a viable invention takes work—time-consuming, tedious, and sometimes frustrating work!
- 11 If invention is one percent inspiration and ninety-nine percent perspiration, I’m putting my money on the ninety-nine percent. 🐼

NOTES

 WORD NETWORK FOR INVENTION

Vocabulary A Word Network is a collection of words related to a topic. As you read the selections in this unit, identify interesting words related to the idea of invention and add them to your Word Network. For example, you might begin by adding words from the Launch Text, such as *contraption*, *ingenious*, and *transformational*. Continue to add words as you complete this unit.



 **Tool Kit**
Word Network Model

Summary

Write a summary of “Inspiration Is Overrated!” A **summary** is a concise, complete, and accurate overview of a text. It should not include a statement of your opinion or an analysis.

Launch Activity

Conduct a Four-Corner Debate Consider this statement: **Inventing takes one percent inspiration and ninety-nine percent perspiration.** Choose a position and explain why you feel this way.

- Strongly Agree Agree Disagree Strongly Disagree

- Join your classmates who chose the same response in one corner of the room. Together, formulate arguments for the class discussion.
- Share your group’s ideas with your classmates. Then, ask questions or make comments. Remember to express your own point of view in a considerate, respectful way.
- After the debate, decide whether your opinion has changed. Go to the corner that best represents your new opinion.

QuickWrite

Consider class discussions, the video, and the Launch Text as you think about the prompt. Record your first thoughts here.

PROMPT: **Which invention has had the biggest impact on humanity?**

EVIDENCE LOG FOR INVENTION

Review your QuickWrite. Summarize your point of view in one sentence to record in your Evidence Log. Then, record evidence from "Inspiration Is Overrated!" that supports your point of view.

Prepare for the Performance-Based Assessment at the end of the unit by completing the Evidence Log after each selection.

 **Tool Kit**
Evidence Log Model

Title of Text: _____ Date: _____

CONNECTION TO PROMPT	TEXT EVIDENCE/DETAILS	ADDITIONAL NOTES/IDEAS

How does this text change or add to my thinking? _____ Date: _____

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Review Topic: Angles of Two-Dimensional Figures (8.G.5)

The **Triangle Sum Theorem** states that the sum of the angles of a triangle should always equal 180°

Example: The first two angles in a triangle are 62° and 55° . Determine the measure of the 3rd angle.

$62^\circ + 55^\circ + x^\circ = 180^\circ$ Use x to represent the unknown angle and solve the equations for x .

$180 - (62 + 55) = x$ Subtract 62 and 55 from both sides to isolate x .

$63^\circ = x$ The measure of the unknown angle is 63° .

Determine the unknown angle that would create a triangle.

$25^\circ, 93^\circ, x^\circ$

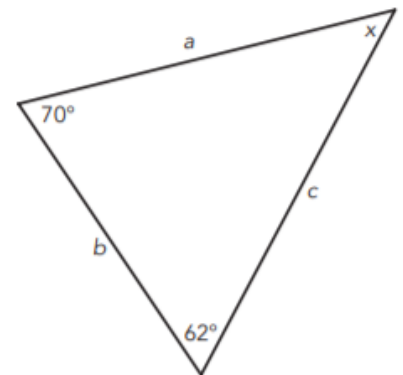
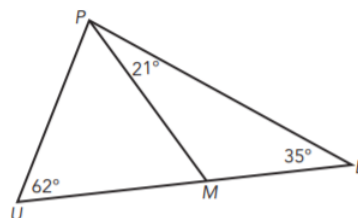
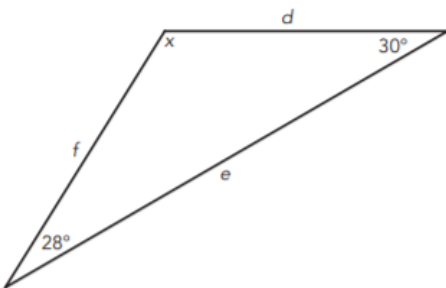
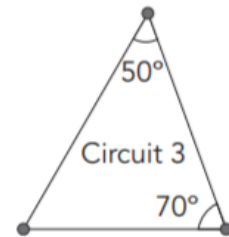
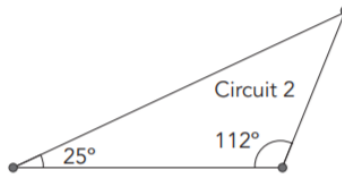
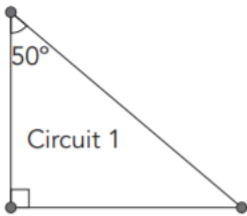
$100^\circ, 70^\circ, x^\circ$

$38^\circ, 23^\circ, x^\circ$

$90^\circ, x^\circ, 41^\circ$

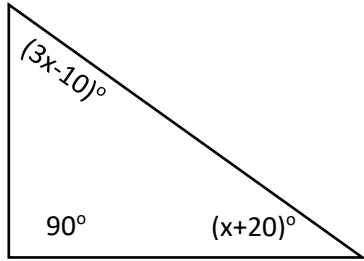
$x^\circ, 57^\circ, 49^\circ$

$46^\circ, 82^\circ, x^\circ$



Solve to find the variable. Then determine the measure of each angle.

Example: More than one unknown angle.



$$90^\circ + (3x-10)^\circ + (x+20)^\circ = 180^\circ$$

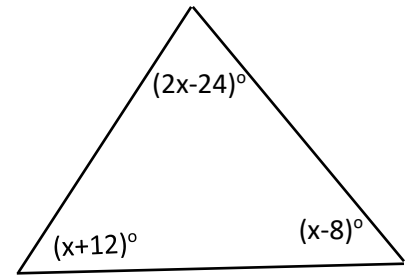
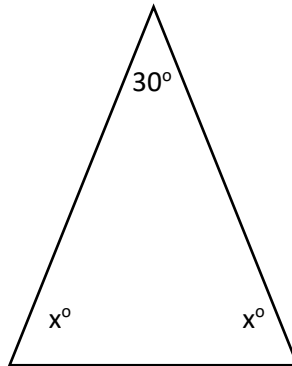
$$4x + 100 = 180$$

$$4x = 80$$

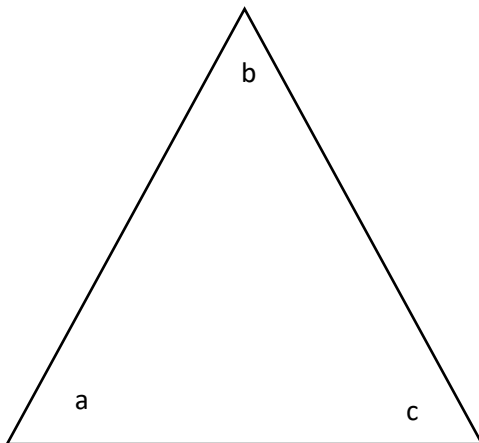
$$x = 20$$

$$3(20) - 10 = 50^\circ$$

$$(20) + 20 = 40^\circ$$



Determine the value of x and label each angle with the correct measure.



1) $a = 20^\circ$ $b = 5x^\circ$ $c = 15^\circ$

2) $a = (3x - 8)^\circ$ $b = (2x + 5)^\circ$ $c = (4x - 15)^\circ$

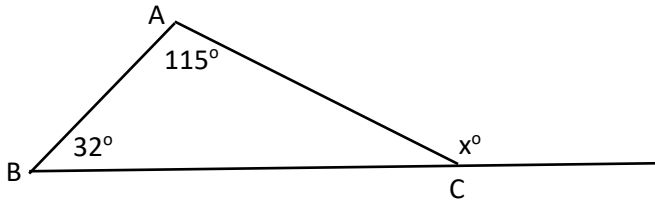
3) $a = (10x - 2)^\circ$ $b = (7x + 6)^\circ$ $c = (3x + 6)^\circ$

4) $a = (3x)^\circ$ $b = (2x)^\circ$ $c = (x)^\circ$

5) $a = (x + 4)^\circ$ $b = (x + 38)^\circ$ $c = (x - 9)^\circ$

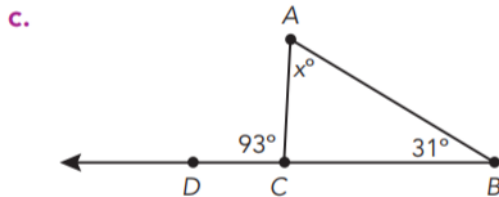
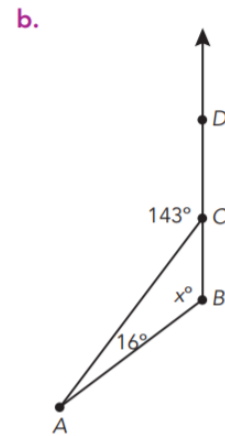
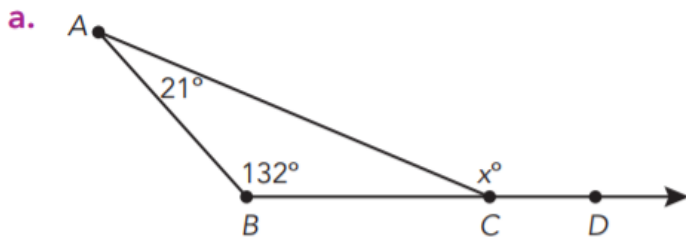
Use the exterior angle theorem to find missing angles.

The **Exterior Angle Theorem** states that the measure of the exterior angle of a triangle is equal to the sum of the measures of the two remote interior angles of the triangle.

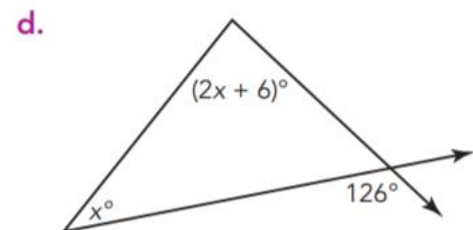
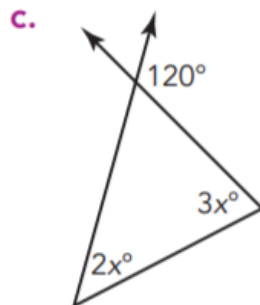
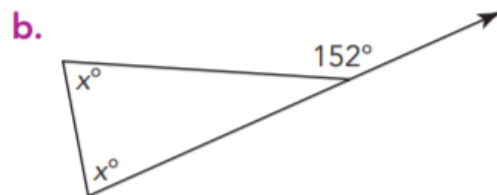
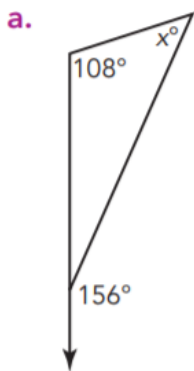


$$\begin{aligned} \angle CAB + \angle ABC &= x^\circ \\ 115^\circ + 32^\circ &= x^\circ \\ 147^\circ &= x \end{aligned}$$

Use the exterior angle theorem to determine the measure of the unknown angle.

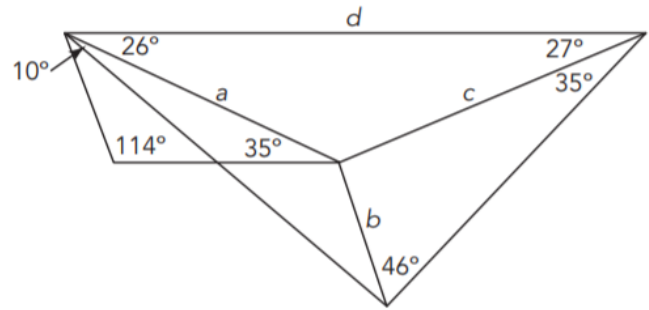
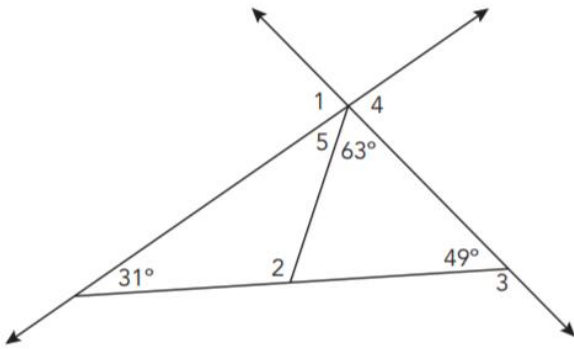


Use the Exterior Angle Theorem to write and solve an equation to determine the unknown angle measurements.

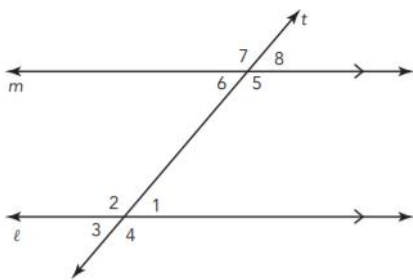


Stretch Your Thinking!

Determine the value of each of the missing angles using the Triangle Sum Theorem and the Exterior Angle Theorem.



Transversal Lines



In this diagram the two parallel lines, m and l , are intersected by a transversal, t . A **transversal** is a line that intersects two or more lines.

There is a special relationship between angles like $\angle 1$ and $\angle 6$ or $\angle 2$ and $\angle 5$. **Alternate interior angles** are angles formed when a transversal intersects two other lines. These angle pairs are on opposite sides of the transversal and are between the two other lines.

Alternate exterior angles are also formed when a transversal intersects two lines. These angle pairs are on opposite sides of the transversal and are outside the other two lines.

Congruent Angles have the same measurement. Alternate interior and alternate exterior angles are congruent when lines m and l are parallel.

Classify each angle pair as one of the following relationships:

Vertical – Opposite angles when two lines intersect

Adjacent – Angles that share a boarder and together equal 180°

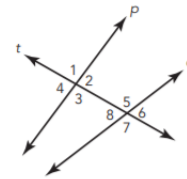
Corresponding – occur at the same position when a straight line intersects two lines forming 8 angles.

Same-side Interior – angles on the same side of the transversal and inside the other two lines.

Same-side Exterior – angles on the same side of the transversal and outside the other two lines.

Alternate Interior – angles opposite sides of the transversal and inside the other two lines.

Alternate Exterior - angles opposite sides of the transversal and outside the other two lines.



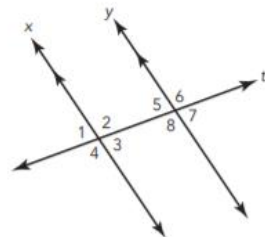
1. angle 1 and angle 2
2. angle 1 and angle 3
3. angle 1 and angle 6
4. angle 3 and angle 7
5. angle 2 and angle 8
6. angle 1 and angle 7
7. angle 4 and angle 7
8. angle 6 and angle 8
9. angle 3 and angle 4
10. angle 2 and angle 6
11. angle 2 and angle 5
12. angle 3 and angle 5

Use the map to answer each question. Explain your reasoning.



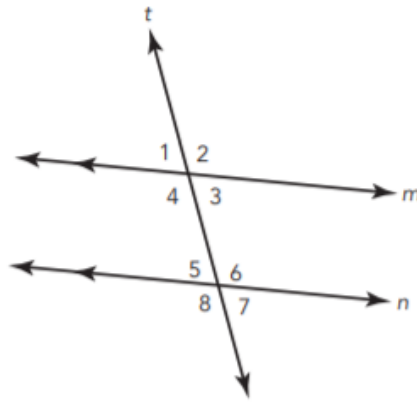
1. Identify each street that is a transversal to Hoover and Wilson.
2. Identify each street that is not a transversal to Hoover and Wilson.
3. Identify each street that is a transversal to Monroe and Polk.
4. Identify each street that is not a transversal to Monroe and Polk.
5. Identify all the angles that are same-side exterior to $\angle 11$.
6. Identify all the angles that are alternate interior to $\angle 11$.
7. Identify all the angles that are corresponding to $\angle 11$.
8. Identify all the angles that are vertical to $\angle 11$.

Use the diagram to answer the questions. Explain your reasoning.



1. Identify the angles that are congruent to $\angle 6$.
2. Identify the angles that are supplementary to $\angle 6$.
3. Identify the angles that are neither congruent nor supplementary to $\angle 6$.
4. Identify the angles that are congruent to $\angle 3$.
5. Identify the angles that are supplementary to $\angle 3$.
6. Identify the angles that are neither congruent nor supplementary to $\angle 3$.

In the diagram t intersects parallel lines m and n . Classify each pair of angles and determine the measure of the angle. The measure of angle 4 is 106° .



1. $\angle 4$ and $\angle 1$, $m\angle 1 = \underline{\hspace{2cm}}$

2. $\angle 4$ and $\angle 2$, $m\angle 2 = \underline{\hspace{2cm}}$

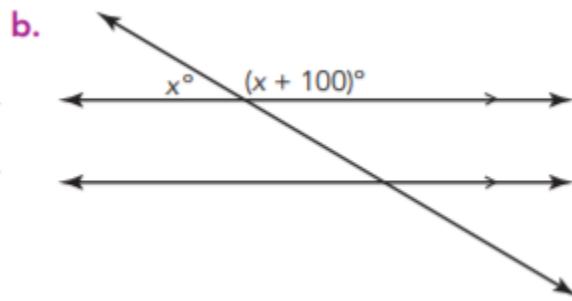
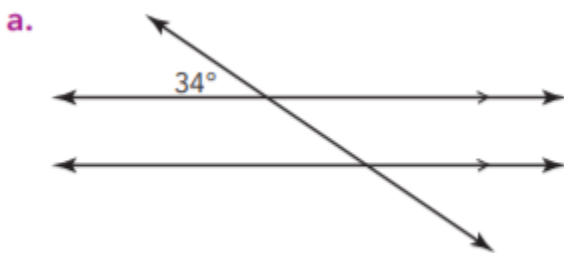
3. $\angle 4$ and $\angle 3$, $m\angle 3 = \underline{\hspace{2cm}}$

4. $\angle 4$ and $\angle 8$, $m\angle 8 = \underline{\hspace{2cm}}$

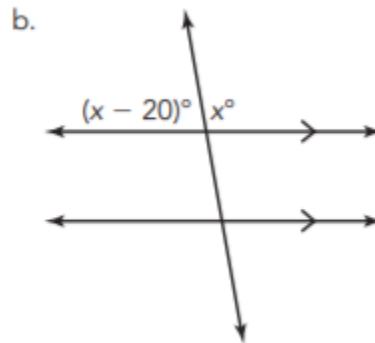
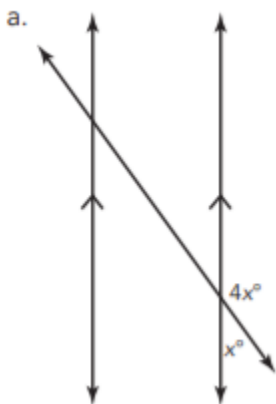
5. $\angle 4$ and $\angle 5$, $m\angle 5 = \underline{\hspace{2cm}}$

6. $\angle 5$ and $\angle 7$, $m\angle 7 = \underline{\hspace{2cm}}$

Find the measure of each of the missing angle measures. Assume the transversal line is intersecting parallel lines.

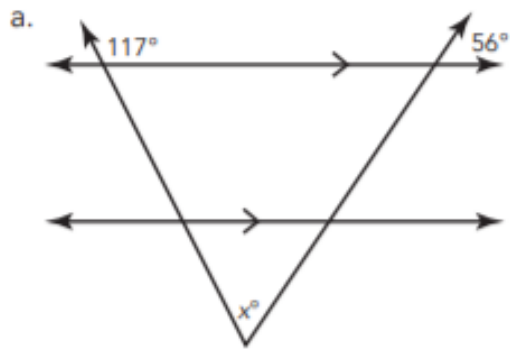


Determine the measure of all the angles in each diagram.

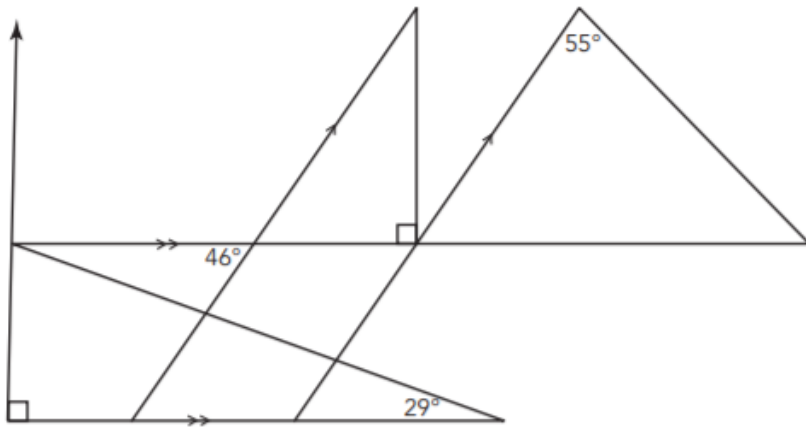


Stretch your thinking

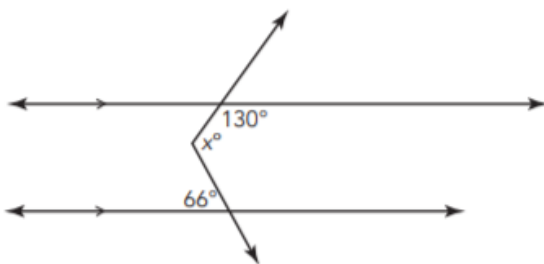
Solve for x . Show all your work.



Determine the measure of each angle in this figure.



Solve for x . Show all your work.



Supports for Diverse Learners

8th Grade Math

Week 2

Standard: 8.G.5

Topic:

- Angles of Triangles

Supports:

- Notes
- [Video to Activate Prior Knowledge](#)

Standard: 8.G.5

Topic:

- Solve Equations to Find Angle Measures

Supports:

- Step-by-step Instructions with Video Supports

Standard: 8.G.5

Topic:

- Exterior Angle Theorem to Find Angle Measures

Supports:

- Worked Example
- [Video to Activate Prior Knowledge](#)

8.G.5 Notes for page 1

To find the measure of an unknown side, subtract all known angles from 180.

Remember that a right angle is 90 and is sometimes indicated by a box.



If a triangle has two of the same variables (letters), the angles will have equal measures. Subtract the known angle from 180, then divide that difference (answer) by 2.

8.G.5 Step-by-step Instructions for page 2

Step 1: Set up an equation where all terms are added together and equal 180.

Step 2: Combine like terms on the same side of the = sign.

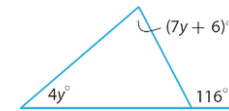
[Click for a combining like terms video.](#)

Step 3: Solve the 1-2 step equation to isolate the variable.

[Click for a solving equations video.](#)

Step 4 (only bottom section): Replace the value for x (answer from Step 3) into the original expression to find the measure for each angle.

8.G.5 Worked Example for page 3-4



Step 1: Write an equation where the two interior angles are added together and equal to the exterior angle.

$$4y + (7y + 6) = 116$$

Step 2: Combine like terms.

$$4y + 7y = 11y$$

$$\text{so you are left with } 11y + 6 = 116$$

Step 3: Solve the 2 step equation.

$$\text{subtract 6 from both sides } 11y = 110$$

$$\text{divide 11 from both sides } y = 10$$

Step 4: Replace the value for x into the original expression to find the measure for each angle.

$$4y$$

$$4(10)$$

$$40 \text{ degrees}$$

$$7y + 6$$

$$7(10) + 6$$

$$70 + 6$$

$$76 \text{ degrees}$$

Supports for Diverse Learners 8th Grade Math Week 2

Standard: 8.G.5

Topic:

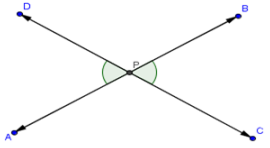
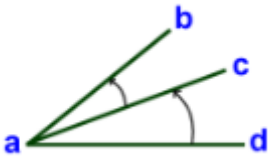
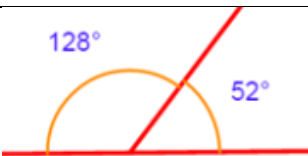
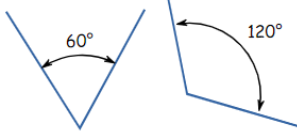
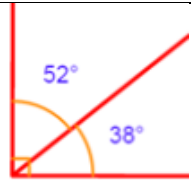
- Transversal Lines

Supports:

- Key Terms and Definitions
- [Video to Activate Prior Knowledge](#)

General Accommodations:

- Read aloud all text
- Use a calculator
- Reduce the number of problems to complete if they are the same type
- Highlighter to denote angles of same measure, supplementary/complementary angles, etc.

Additional Geometry Terms		
Key Term	Definition	Image
vertical angles	The angles opposite each other when two lines cross.	
adjacent angles	Two angles that share a common vertex and one common side. They do not overlap.	
linear pairs	Adjacent angles that create a supplementary angle.	
supplementary angles	Two angles that add up to 180°. They don't have to be adjacent.	
complementary angles	Two angles that add up to 90°.	



Understanding Representing a Situation with Different Expressions

► **Complete the problems by rewriting algebraic expressions.**



- 1 Goby fish and shrimp naturally live close together. A pet store is selling bags of goby fish and shrimp to aquarium hobbyists. Each goby fish costs \$15, and each shrimp costs \$10. Each bag has an equal number of goby fish and shrimp.
- The pet store models the cost per bag with the expression $x(15 + 10)$. Explain what the expression represents.
 - What other expression can you use to model the cost? Explain what the expression represents.



- 2 Ms. Gandhi runs 1 mile each morning and 1 mile each evening. She also does 10 push-ups each morning and each evening.
- Ms. Gandhi writes the two expressions $2(m + 10p)$ and $2m + 20p$. Explain how each expression represents how much she exercises.
 - Ms. Gandhi wants to determine how much she will exercise this week. Write an expression to model this situation. Explain your expression.



- 3 Write two expressions for the perimeter of a square. Explain what information is in one of your expressions that is not in the other.

Writing and Solving Equations with Two or More Addends

► Solve each equation. The answers are mixed up at the bottom of the page. Cross out the answers as you complete the problems.



1 $8x + 15 = 63$



2 $9x - 13 = 23$

3 $135 = 2x + 25$

4 $33 = 32x - 31$

5 $12x - 16 = 68$

6 $7x + 115 = 136$

7 $82 = 4x + 14$

8 $2x - 56 = 34$

9 $3x - 4\frac{1}{2} = -19\frac{1}{2}$

10 $10 = -\frac{1}{4}x + 12$

11 $6x + 4.59 = 11.19$

12 $25.68 = 2x - 6.32$

Answers

$x = 1.1$

$x = 45$

$x = -5$

$x = 6$

$x = 7$

$x = 16$

$x = 4$

$x = 55$

$x = 17$

$x = 8$

$x = 2$

$x = 3$

Writing and Solving Inequalities

► Write and solve an inequality to answer each question.



- 1 Tetsuo has 50 arcade tokens. Each arcade game at RetroRama costs 4 tokens. How many games can Tetsuo play?



- 2 Kimberly has \$120 to spend at the bookstore. Kimberly buys a hardcover book for \$36, as well as some gift cards for her family and friends. Each gift card is \$15. How many gift cards can Kimberly buy?

- 3 Kwame has a budget of \$720 for his college class. He buys a laptop for \$330 and wants to use the rest to buy computer programs. Each program costs \$60. How many programs can Kwame purchase?

- 4 A farmer ties 4 bags on his mule. If the mule can carry up to 200 lb and each bag weighs 30 lb, how many more bags can the mule carry?

Writing and Solving Inequalities *continued*

- 5 Helga signs up to coach hockey. She wants to make at least \$775 during the season. She gets \$200 at the start of the season and \$50 for each practice session she has. How many practice sessions does Helga need to have this season?

- 6 Logan has a budget of \$400 to have family pictures taken. There is a sitting fee of \$38. Prints cost \$25 per page. How many pages of prints can Logan order?

- 7 At TopLine's 50th anniversary celebration, managers and assistants earn custom-engraved plaques in recognition of their outstanding performance. TopLine purchased a total of 81 plaques for the event. The company gives 25 plaques to the managers and at least 2 plaques to each assistant. What is the maximum number of assistants at the event?

- 8 A cartoonist has 150 pieces of original artwork to give to his publishers and some fans who won his online contest. He plans to send 30 drawings to his publishers. He is sending at least 3 pieces of artwork to each contest winner. How many contest winners could there be?

Skills Practice

Name _____ Date _____

I. Modeling Rates of Change

A. Write a linear equation to model each problem situation and use the equation to answer the question.



1. Autumn creates custom bracelets as a hobby and is planning to start selling them online for \$10 per bracelet. Autumn has already sold 5 custom bracelets. Her bracelets are so popular that she expects to sell every bracelet that she makes. Write an equation for the amount of money Autumn makes. If Autumn makes an additional 24 bracelets, how much money will she make?



2. Antonio works at the circus making balloon animals, charging \$3 for a balloon animal. Before he took a lunch break at noon, he sold 14 balloon animals. After lunch, he goes back to selling balloon animals for the rest of the day. Write an equation for the amount of money Antonio makes. How many balloon animals would Antonio need to sell after lunch to make \$117 for the day?

3. Violet is trying to start an Intramural Club at her school. The principal tells her she must get signatures from students to show support. Each filled sheet contains 25 signatures. By Monday, she and her friend already have 6 sheets filled with signatures. The principal tells Violet she must have 7 more sheets filled with signatures. Write an equation for the number of signatures Violet will get. If she fills all of these, how many signatures will she get in all?

4. Tremaine thought it would be okay to check his email, text, listen to music, and eat free food for 1 hour of each of his shifts at Slow Food to Go. He lasted for 6 shifts, and then (to put it nicely) he was let go. Write an equation for the number of hours Tremaine actually worked. If Tremaine actually worked a total of 18 hours during his 6 shifts at Slow Food to Go, how many hours was he scheduled to work each shift?

Name _____ Date _____



E. Solve each inequality and then graph the solution on the number line.

1. $4x + 3 \leq 3x - 5$



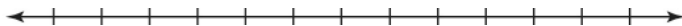
2. $-2x > 6$



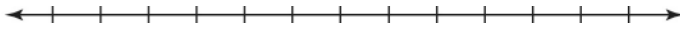
3. $\frac{1}{8}(3x - 16) < 4$



4. $\frac{x-3}{2} \geq -5$



5. $-4(2 - x) \leq 6(x + 2)$



VII. Representing Compound Inequalities

A. Write each compound inequality in compact form.

1. All numbers less than or equal to 22 and greater than -4 .

2. All numbers less than 55 and greater than 45

3. All numbers greater than or equal to 0 and less than or equal to 6.

Name _____ Date _____

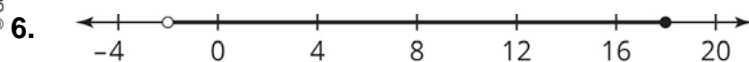
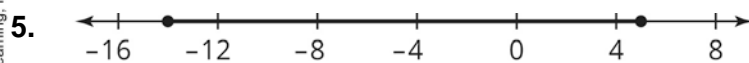
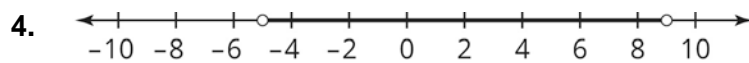
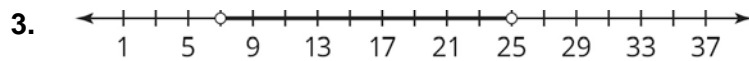
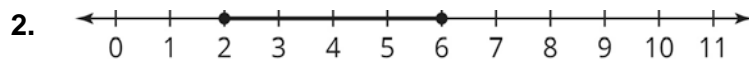
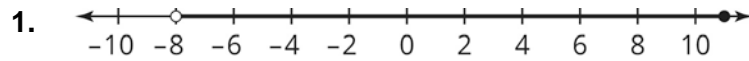
4. All numbers greater than 10 and less than 1000

5. All numbers less than or equal to 87 and greater than or equal to 83

6. All numbers greater than -1 and less than or equal to 39



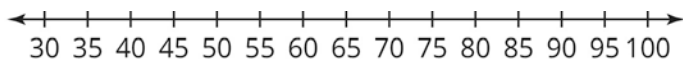
B. Write an inequality for each graph.



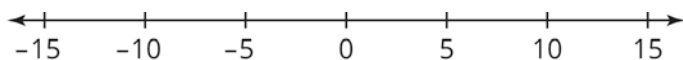
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C. Graph each inequality.

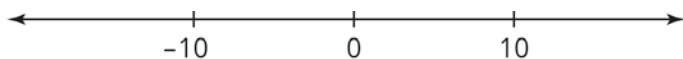
1. $45 < x < 75$



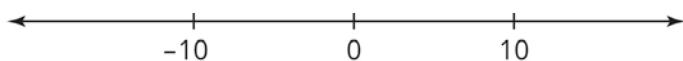
2. $-5 < x < 5$



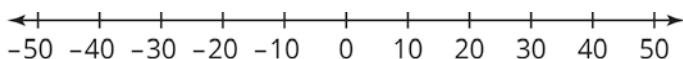
3. $-13 \leq x \leq 5$



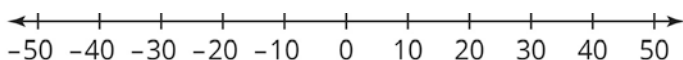
4. $-6 \leq x < 19$



5. $-35 \leq x \leq 50$



6. $-5 < x \leq 45$



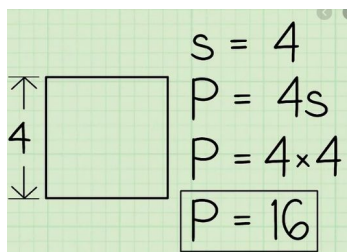
Algebra Support for Specialized Instruction

- Goby fish and shrimp naturally live close together. A pet store is selling bags of goby fish and shrimp to aquarium hobbyists. Each goby fish costs \$15, and each shrimp costs \$10. Each bag has an equal number of goby fish and shrimp.
- Ms. Ghandi runs 1 mile each morning and 1 mile each evening. She also does 10 push-ups each morning and each evening.
 - Ms. Ghandi writes the two expressions $2(m + 10p)$ and $2m + 20p$. Explain how each expression represents how much she exercises.

M presents: _____

P presents: _____

- Write two expressions for the perimeter of a square. Explain what information one of your expressions that is not in the other.



1 $8x + 15 = 63$

$$8x + 15 = 63$$

$$8x - 15 = -15$$

$$\frac{8x}{8} = \frac{48}{8}$$

$$x = 6$$

2 $9x - 13 = 23$

fill in blanks

$$9x - 13 = 23$$

$$9x + \underline{\quad} = + \underline{\quad}$$

$$\frac{9x}{\underline{\quad}} = \underline{\quad}$$

$$x = \underline{\quad}$$

- Tetsuo has 50 arcade tokens. Each arcade game at RetroRama costs 4 tokens. How many games can Tetsuo play?

$$50 = 4x$$

$$\frac{50}{4} = \frac{4x}{4}$$

$$= x$$

- Kimberly has \$120 to spend at the bookstore. Kimberly buys a hardcover book for \$36, as well as some gift cards for her family and friends. Each gift card is \$15. How many gift cards can Kimberly buy?

- Autumn creates custom bracelets as a hobby and is planning to start selling them online for \$10 per bracelet. Autumn has already sold 5 custom bracelets. Her bracelets are so popular that she expects to sell every bracelet that she makes. Write an equation for the amount of money Autumn makes. If Autumn makes an additional 24 bracelets, how much money will she make?

$$10(5) + 10(24) = x$$

- Antonio works at the circus making balloon animals, charging \$3 for a balloon animal. Before he took a lunch break at noon, he sold 14 balloon animals. After lunch, he goes back to selling balloon animals for the rest of the day. Write an equation for the amount of money Antonio makes. How many balloon animals would Antonio need to sell after lunch to make \$117 for the day?

$$3(14) + 3x = 117$$

$$42 + 3x = 117$$

$$-42 + 3x = -42$$

$$\frac{3x}{3} = \frac{75}{3}$$

$$x = 25$$

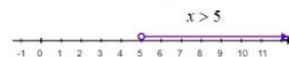
Symbol

Words

Example

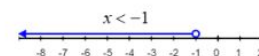
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Greater than



<

Less than



≥

Greater than and equal



≤

Less than and equal



1. $4x + 3 \leq 3x - 5$



$$4x + 3 \leq 3x - 5$$

$$-3x - 3 \leq -3x - 5$$

$$x \leq -5 - 3$$

$$x \leq -8$$