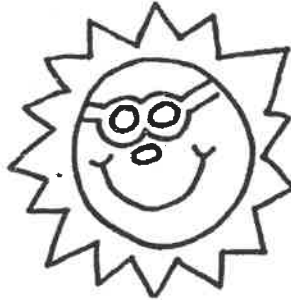


Name: _____

Math Summer Work 2022 Rising 6th to 7th Grade



Hello Students!

Attached you will find a Summer Math Packet that will provide practice and enrichment reviewing important Math concepts from 6th Grade Math. In PreAlgebra in 7th Grade we will build on all of the foundational skills that you learned in 6th Grade.

I know you have been working hard with your teachers and your extremely supportive families and you are well prepared to begin PreAlgebra as you start 7th Grade. It is very important that you ask questions when you are unsure and practice using Math every day!

I do not recommend that you complete this entire packet in one sitting. I have broken it down into practice sets / topics to help guide you as you work. See the following breakdown on content area and skill sets covered on the next page. You should set a target and complete some problems each week during the course of the summer, with your goal to have the entire packet completed by the first day of school in September. Please show work where applicable so you will be able to easily check your work.

This review will help you keep your skills sharp over the summer. If you have any questions you can contact me!

Sincerely,

Mrs. Hallahan
hallahan@stannesgcschool.org

Practice Sets / Topics covered in the Summer Review

<u>Practice Set 1:</u> <ul style="list-style-type: none">• Algebraic Expressions and Properties
<u>Practice Set 2:</u> <ul style="list-style-type: none">• Simplifying expressions using Order of Operations
<u>Practice Set 3:</u> <ul style="list-style-type: none">• Algebraic Equations
<u>Practice Set 4:</u> <ul style="list-style-type: none">• Algebraic Inequalities
<u>Practice Set 5:</u> <ul style="list-style-type: none">• Geometry; Perimeter, Area, Surface Area and Volume of Polygons and Prisms
<u>Practice Set 6:</u> <ul style="list-style-type: none">• Statistical Measures
<u>Practice Set 7:</u> <ul style="list-style-type: none">• Rates, Ratios and Percents
<u>Practice Set 8:</u> <ul style="list-style-type: none">• Integers and Integer Operations• I have included at the end of this pack a review of the rules for Integer Operations to help you! ☺

Question and Work in this column:

Final Answer in this column:

<u>Practice Set #1, Algebraic Expressions and Properties:</u>	
Question #1: Simplify the expression. Identify the property used. $4(x - 3)$	Answer:
Question #2: Simplify the expression. Identify the property used. $(3 \cdot x) \cdot 7$	Answer:
Question #3: Simplify the expression. Identify the property used. $4(x + 3)$	Answer:
Question #4: Simplify the expression. Identify the property used. $(3.5 \cdot x) \cdot 4$	Answer:
Question #5: Identify the terms, coefficients, & constants of the expression. $5h + 9$	Answer:
Question #6: Identify the terms, coefficients, & constants of the expression. $a^2 + 2 + 7b$	Answer:

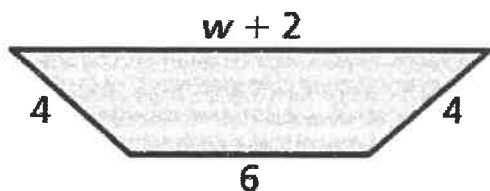
Question #7: Identify the terms, coefficients, & constants of the expression. $12 + 10c$	Answer:
Question #8: Identify the terms, coefficients, & constants of the expression. $g + 12 + 9g$	Answer:
Question #9: Write the phrase as an algebraic expression. a number x multiplied by 3	Answer:
Question #10: Write the phrase as an algebraic expression. 4 less than a number w	Answer:
Question #11: Write the phrase as an algebraic expression. a number x divided by 4	Answer:
Question #12: Write the phrase as an algebraic expression. 7 increased by a number w	Answer:
Question #13: Write the phrase as an algebraic expression. twice a number z	Answer:
Question #14: Evaluate the expression when: $a = 4$, $b = 2$, and $c = 8$ $a + 7$	Answer:

Question #15: Evaluate the expression when: $a = 4, b = 2,$ and $c = 8$ bc	Answer:
Question #16: Evaluate the expression when: $a = 4, b = 2,$ and $c = 8$ $\frac{c}{a}$	Answer:
Question #17: Translate the algebraic expression into a verbal model/phrase: $14 - 3z$	Answer:
Question #18: Translate the algebraic expression into a verbal model/phrase: $4w$	Answer:
Question #19: Your friend has 5 more than twice as many game tokens as your sister. Let x be the number of game tokens your sister has. Write an algebraic expression for the number of game tokens your friend has.	Answer:
Question #20: Write the expression using exponents: $a \cdot a \cdot c \cdot c$	Answer:

Question #21: Write the expression using exponents: $4 \cdot d \cdot d \cdot d$	Answer:
Question #22: Tell which property the statement illustrates. $6 + (4 + x) = (6 + 4) + x$	Answer:
Question #23: Tell which property the statement illustrates. $3(x - 3) = 3x - 9$	Answer:
Question #24: Tell which property the statement illustrates. $7 \cdot m = m \cdot 7$	Answer:
Question #25: Simplify the expression. $3x + 9 + 2x - 5$	Answer:
Question #26: Simplify the expression. $3(w + 1) - 1$	Answer:
Question #27: Simplify the expression. $5(k + 4) - 2k$	Answer:

Question #28:

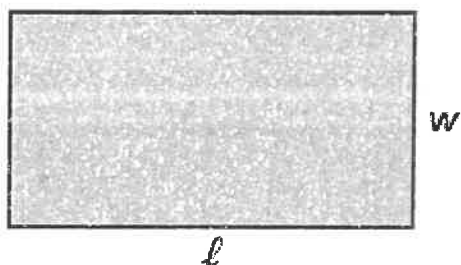
Write and simplify an algebraic expression to represent the perimeter of the trapezoid.

**Answer:****Question #29:**

Write and simplify an algebraic expression to represent the perimeter of the square.

**Answer:****Question #30:**

Write and simplify an algebraic expression to represent the perimeter of the rectangle.

**Answer:****Question #31:**

Each day, you run on a treadmill for m minutes and lift weights for 15 minutes. Which expression can you use to find how many minutes, r , of exercise you do in 5 days? Explain your reasoning.

$$5(r + 15)$$

$$5r + 5 \cdot 15$$

$$5r + 15$$

$$r(5 + 15)$$



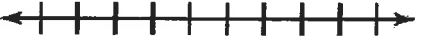



Answer:






Practice Set #2, Order of Operations (PEMDAS):	
Question #32: Simplify the expression. $6 + 9 \div 3$	Answer:
Question #33: Simplify the expression. $5^2 - 4 \times 2$	Answer:
Question #34: Simplify the expression. $15 + 3(6 \div 2) - 4^2$	Answer:
Question #35: Simplify the expression, $7 + 3(12 \div 4) - 3^2$	Answer:
Question #36: Simplify the expression $\frac{3(2 + 4)}{2}$	Answer:
Question #37: Simplify the expression $2^3 + (8 - 4) \div 4$	Answer:

<u>Practice Set #3, Algebraic Equations</u>	
Question #38: Solve the Equation. Check your solution. $s + 3 = 13$	Check:
Question #39: Solve the Equation. Check your solution. $4c = 24$	Check:
Question #40: Solve the Equation. Check your solution. $\frac{3}{4}s = 12$	Check:
Question #41: Solve the Equation. Check your solution. $a - 6 = 13$	Check:
Question #42: Solve the Equation. Check your solution. $\frac{m}{2} + 6 = 10$	Check:

Question #43: Solve the Equation. Check your solution. $2x + 5 = 13$	Check:
Question #44: Solve the Equation. Check your solution. $4x - 3 = 9$	Check:
Question #45: Solve the Equation. Check your solution. $3(x + 2) = 15$	Check:
Question #46: Solve the Equation. Check your solution. $2(2x - 1) = 10$	Check:
Question #47: Solve the Equation. Check your solution. $3x - 2 = -8$	Check:

<p>Question #48: Write the word sentence as an Algebraic Equation. And then solve your equation. Check your solution.</p> <p>3 increased by a number x is 9.</p>	<p>Check:</p>
<p>Question #49: Write the word sentence as an Algebraic Equation. And then solve your equation. Check your solution.</p> <p>The product of a number y and 3 is 6.</p>	<p>Check:</p>
<p>Question #50: Match each Algebraic Equation with the word sentence</p> <ol style="list-style-type: none">1. The sum of a number n and 3 is 9.2. The product of a number n and 3 is 9.3. The quotient of a number n and 3 is 9.4. 9 is 3 less than a number n.	<p>A. $\frac{n}{3} = 9$</p> <p>B. $n - 3 = 9$</p> <p>C. $3n = 9$</p> <p>D. $n + 3 = 9$</p>
<p>Question #51: Solve the Equation. Check your solution.</p> $a - \frac{3}{4} = \frac{1}{8}$	<p>Check:</p>

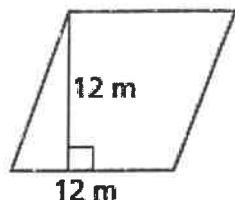
Practice Set #4, Algebraic Inequalities	
Question #52: Graph the Inequality on a number line. $b > 6$	Graph: 
Question #53: Graph the Inequality on a number line. $y < -1$	Graph: 
Question #54: Graph the Inequality on a number line. $m \leq 1$	Graph: 
Question #55: Write the word sentence as an Algebraic Inequality. Graph. A number n is at least 10.	Graph: 
Question #56: Write the word sentence as an Algebraic Inequality. Graph. 15 is more than a number x .	Graph: 
Question #57: Write the word sentence as an Algebraic Inequality. Graph. A number s is no more than 18.	Graph: 

<p>Question #58: Write the word sentence as an Algebraic Inequality. Graph.</p> <p>A number b is less than 12.</p>	<p>Graph:</p> 
<p>Question #59: Solve the Inequality. Graph the solution.</p> $k - 3 < 5$	<p>Graph:</p> 
<p>Question #60: Solve the Inequality. Graph the solution.</p> $12c \leq 72$	<p>Graph:</p> 
<p>Question #61: Solve the Inequality. Graph the solution.</p> $\frac{x}{4} > 5$	<p>Graph:</p> 
<p>Question #62: A golf course charges \$10 to golf or \$150 for a summer pass. Write and solve an inequality to represent the number of times you would need to golf in order for the summer class to be a better deal. Let g = # of times you golf. Graph your solution set on a number line.</p>	<p>Graph:</p> 

Practice Set #5, Polygons, Prisms, Area, Volume

Question #63:

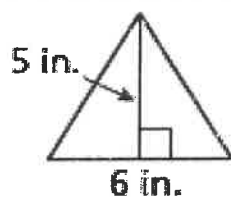
Find the area of the parallelogram.



Answer:

Question #64:

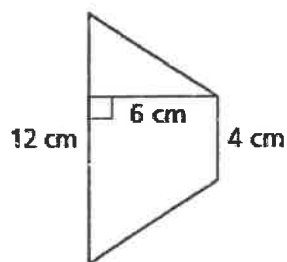
Find the area of the triangle.



Answer:

Question #65:

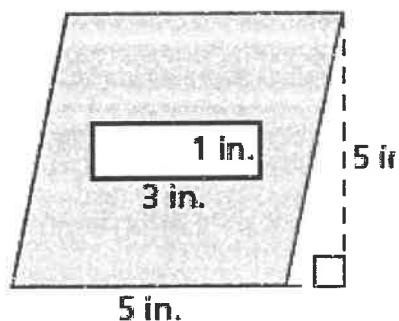
Find the area of the trapezoid.



Answer:

Question #66:

Find the area of the shaded region.



Answer:

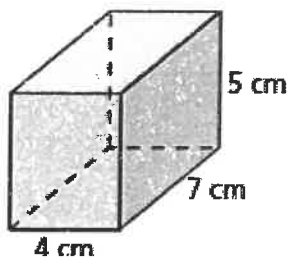
Question #67:

Which description represents the area of a parallelogram?

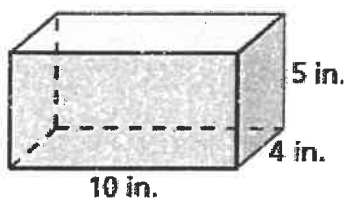
- A. the product of the length and the height
- B. the sum of all of the side lengths
- C. the square of the side length
- D. four times the length

Answer:**Question #68:**

Find the surface area of the prism.

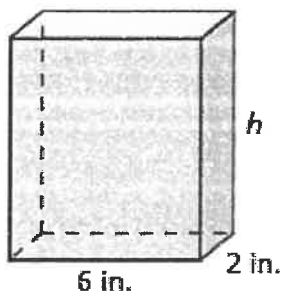
**Answer:****Question #69:**

Find the volume of the prism.

**Answer:****Question #70:**

Write and solve an equation to find the missing dimension of the prism.

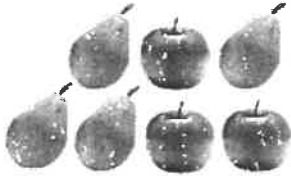
$$\text{Volume} = 84 \text{ in.}^3$$

**Answer:**

Practice Set #6, Statistical Measures	
Question #71: Determine the Mean for the given data set: 12, 12, 10, 8, 9, 9, 9, 11, 11, 8	Answer:
Question #72: Determine the Median for the given data set: 12, 12, 10, 8, 9, 9, 9, 11, 11, 8	Answer:
Question #73: Determine the Mode for the given data set: 12, 12, 10, 8, 9, 9, 9, 11, 11, 8	Answer:
Question #74: Determine the Range for the given data set: 12, 12, 10, 8, 9, 9, 9, 11, 11, 8	Answer:
Question #75: Determine whether each question is a statistical question. Explain. 1. How many hours do sixth-grade students sleep per night? 2. How many countries are in North America?	Answer:

Practice Set #7, Rates, Ratios and Percents:**Question #75:****Write the ratio. Explain what the ratio means.**

apples to pears

**Answer:****Question #76:****Find the missing values in the ratio table.**

Pencils	6	18	
Erasers	2		22

Answer:**Question #77:****Write a unit rate for the situation.**

1200 calories in 3 liters

Answer:**Question #78:****Determine which is the better buy.**

Beef	A	B
Cost (dollars)	7.38	9.57
Pounds	2	3

Answer:**Question #79:****Write each fraction as a percent.**

$$\frac{7}{8}$$

$$\frac{13}{20}$$

Answer:**Question #80:****Find the percent of the number.**

20% of 90

Answer:

<u>Practice Set #8, Integers and Integer Operations:</u>	
Question #81: Find the absolute value. 1. $ 8 $ 2. $ -3 $	Answer:
Question #82: Complete the statement using <, >, or =. 3. $4 \text{ } \underline{\hspace{1cm}} -8 $ 4. $ -5 \text{ } \underline{\hspace{1cm}} -10 $	Answer:
Question #83: Evaluate the expression. $-12 + 5$	Answer:
Question #84: Evaluate the expression. $4 + (-2)$	Answer:
Question #85: Evaluate the expression. $-3 + (-7)$	Answer:
Question #88: Evaluate the expression. $-4 - 3$	Answer:
Question #87: Evaluate the expression. $9 - (-2)$	Answer:

Question #88: Evaluate the expression. $-3 - (-7)$	Answer:
Question #89: A scuba diver dives down 20 feet into the ocean. He then swims 11 feet back up towards the surface. What is the position of the scuba diver relative to the surface?	Answer:
Question #90: You and your friend play a video game. You have a final score of 40 points, and your friend has a final score of -21 points. By how many points did you win?	Answer:
Question #91: Evaluate the expression. $-36 \div 4$	Answer:
Question #92: Evaluate the expression. $72 \div 8$	Answer:
Question #93: Evaluate the expression. $-5 \cdot 16$	Answer:

Question #94: Evaluate the expression. $-13(-9)$	Answer:
Question #95: Evaluate the expression. $\begin{array}{r} 48 \\ -12 \end{array}$	Answer:
Question #96: You lose 2 points every time you forget to write your name on a test. You have forgotten to write your name 4 times. What integer represents your change in points from forgetting to write your name?	Answer:
Question #97: The temperature falls from 3°C to -4°C . What is the difference in these temperatures?	Answer:
Question #98: Which set of numbers is ordered from least to greatest? $5, -15, 7, -13, 1$ $-21, -34, -37, -52, -56$ $-3, -1, 0, 1, 3$	Answer:

Question #99/100:

The table shows the temperature in Des Moines, Iowa, for certain times during a particular day.

Time	3 A.M.	8 A.M.	1 P.M.	5 P.M.	10 P.M.
Temperature	-15°F	-6°F	22°F	10°F	-11°F

- What are the high and low temperatures?
- Find the range of temperatures.
- Find the change in temperature from 5 P.M. to 10 P.M.
- Based on the given five temperatures, what is the average temperature for the day?

Answer:

See the Rules of Integer Operations on the last page to help you on the last set!

☺ Remember, email me and reach out if you need help!

hallahan@starnetgeschool.org

Rules for Integers

Adding Integers

Rule: If the signs are the same, add and keep the same sign.

$\{+\} + \{+\} =$ add the numbers and the answer is positive

$\{-\} + \{-\} =$ add the numbers and the answer is negative

Rule: If the signs are different, subtract the numbers and use the sign of the larger number.

$\{+\} + \{-\} =$ subtract the numbers and take the sign of the bigger number

$\{-\} + \{+\} =$ subtract the numbers and take the sign of the bigger number

Subtracting Integers "Same/Change/Change (SCC)"

Rule: The sign of the first number stays the same, change subtraction to addition and change the sign of the second number. Once you have applied this rule, follow the rules for adding integers.

$\{+\} - \{+\} = \{+\} + \{-\}$ SCC, then subtract, take the sign of the bigger number

$\{-\} - \{-\} = \{-\} + \{+\}$ SCC, then subtract, take the sign of the bigger number

$\{+\} - \{-\} = \{+\} + \{+\}$ SCC, then add, answer is positive

$\{-\} - \{+\} = \{-\} + \{-\}$ SCC, then add, answer is negative

Multiplying and Dividing Integers

Rule: If the signs are the same, multiply or divide and the answer is always positive.

$\{+\} \times \{+\} = +$ $\{+\}$ divided by $\{+\} = +$

$\{-\} \times \{-\} = +$ $\{-\}$ divided by $\{-\} = +$

Rule: If the signs are different, multiply or divide and the answer is always negative.

$\{+\} \times \{-\} = -$ $\{+\}$ divided by $\{-\} = -$

$\{-\} \times \{+\} = -$ $\{-\}$ divided by $\{+\} = -$

Social Studies Summer Assignment – Incoming 7th Grade Students

For social studies, students will read one nonfiction OR historical fiction book OF THEIR OWN CHOOSING on the time period they will be studying in the upcoming school year, according to the following breakdown:

Grade 7 = First Half of U.S. History, including historical figures, time periods, or events from the time of the explorers and the American Revolution up to and including the Civil War.

Students will then complete either **one (1) Menu “A” task OR two (2) Menu “B” options**, as follows:

Menu “A” Options: Choose only one.

Create a childhood for a character. If your main character is an adult, try to figure out what he or she would have been like as a child. Write the story of his or her childhood in such a way that shows why he or she is the way he or she is in the novel.

Talk show invitation. Select a character, think about his or her involvements and experiences, and then figure out which talk show would most want your character on as a guest. What would they want the character to talk about? Who else would they invite on the show to address the issues the character is involved in? Write up the correspondence between the talk show host and the character in which the host explains what the character should focus on while on the show. After the show, have them exchange one more letter mentioning how they felt about what happened.

Create a home page. Select several characters and design a home page for each of them, picking out appropriate backgrounds and pictures and then creating information that would tell a viewer about your character. Also, create links to at least five different sites that you think your character would be interested in. Then write up and post on the page an explanation of how you made the decisions you did and what you believe this tells us about the character.

Music. After reading a novel, figure out how you would divide up the book into sections. Then select a piece of music that you think captures the feel or tone of each section. Record the pieces and if possible do voice-overs explaining what is happening in the novel during the piece of music and why you felt this piece of music fit the section of the novel.

A character’s fears. One way we get to know characters is to think deeply about them and make inferences based on their actions and on what they and others say about them. Through a person’s actions we can learn what they fear and what they want to avoid the most. Select two characters from your novel and write 2 short essays (2-3 paragraphs per character) on what you believe they fear the most and what evidence you used to come to this conclusion.

Current events. Select five current news or feature stories from television or news magazines that you think your character would be interested in. Then explain how your character would likely respond to each of the stories and the opinions your character would probably have about what was happening in the story. (Try this website: www.newsela.com, or this one www.tweentribune.com).

Draw a scene. If you are artistic, think of an important scene and draw it the way you see it. Place the characters in the scene too, and then figure out where you would put yourself in relation to the characters as the scene unfolds. Then, write or tape your explanations of why you drew the scene the way you did and why you think you were where you were in the scene. What does it tell you about who you related to in the novel?

You need only choose one task if you are choosing from Menu “A.”

Menu “B” Options: Choose two.

Movie recommendations. From all the movies you’ve seen in the last couple of years, pick five you would recommend that your character see. Give a brief summary of each movie and explain why you think the character should see it.

Heroes and superheroes. Select two or three people your character would think of as a hero or superhero. Describe the characteristics of the hero and why those characteristics would be important to your character. Also describe which characteristics your character would most want for himself/herself that the hero or superhero possesses.

Word collage. Write the title of the book in the center of a sheet of paper. Then look through magazines for words, phrases, and sentences that illustrate or tell something about your book. As you look, think in terms of the theme, setting, plot line, as well as characters. Work to get fifty such words, phrases, or sentences so the whole sheet of paper will be covered. The visual impact of the collage should tell a potential reader a lot about the book.

Photos or magazine pictures. Find two or three photos or magazine pictures that would have special significance to your character. Mount them on a sheet of paper and write an explanation of why they would be important to your character.

Title acrostic. Take a sheet of construction paper and write the title of the book down the side of the paper. For each letter in the title, construct a sentence that begins with that letter and that tells something significant about the story.

Cartoon squares. Create a series of six drawings in six squares that shows a significant event in the novel. Under each picture or cartoon, write a few lines of explanation. (Draw your own or try this website: <http://www.makebeliefscomix.com>.)

Book choices for character. Select a character and then choose five books for him or her, thinking about what he or she might like and also what you think they need to know more about. Aim for a mix of both fiction and nonfiction. Scan school or public library shelves, the Internet, or use the library’s online search options. Why did you select the nonfiction books you did? What do you hope your character will like about or get out of the fiction?

Dream vacation. Where do you think your character would most like to go on a vacation? Pick a spot, describe it (download information from the Internet on the place), and explain why he or she would want to go there. Then write a day-by-day itinerary of what the character would do each day and why you think the character would enjoy this activity.

Poetry. Write three poems in response to the novel. The poems can be about the characters, where the book took place, or the themes in the book. The poems can be rhymed or free-verse.

If you are choosing from Menu “B,” you must choose two tasks from the menu above to represent your understanding of the book you read.

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Social Studies Incoming GRADE 7 BOOK EXAMPLES**

Incoming Grade 7 students may choose ANY non-fiction or historical fiction book from the list below OR one book of their own choosing about the First Half of U.S. History, including historical figures, time periods, or events from the time of the explorers and the American Revolution up to and including the Civil War.

Here are some SAMPLE books (NOT a required list!) to give you a general idea of what to look for:

- Who Was First? Discovering the Americas* by Russell Freedman
- Johnny Tremain* by Ester Forbers
- Lewis and Clark: Their Journey to the Pacific* by Richard Sapp
- My Brother Sam Is Dead* by James Lincoln Collier & Christopher Collier
- The Legend of Bass Reeves* by Gary Paulsen
- The Louisiana Purchase: Expanding America's Boundaries* by Magdalena Alagna
- The Federalists and Anti-Federalists: How and Why Political Parties Were Formed in Young America* by Gregory Payan
- The Journal of Jasper Jonathan Pierce: A Pilgrim Boy* by Ann Rinaldi
- A Line in the Sand: The Alamo Diary of Lucinda Lawrence* by Sherry Garland
- Across the Wide and Lonesome Prairie: The Oregon Trail Diary of Hattie Campbell* by Kristiana Gregory
- Seeds of Hope: The Gold Rush Diary of Susanna Farichild* by Kristiana Gregory
- My Brother's Keeper: Virginia's Diary, Gettysburg, PA* by Mary Pope Osborne
- Betrayed!* by Patricia Calvert
- Nelly in the Wilderness* by Lynn Cullen
- To Be a Slave* by Julius Lester
- Little Women* by Louisa May Alcott
- Written In Bone: Buried Lives of Jamestown and Colonial Maryland* by Sally M. Walker
- The Birchbark House* by Louise Erdrich
- Ghosts of the Civil War* by Cheryl Harness