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ACTAAP

Arkansas Comprehensive Testing, Assessment, and Accountability Program

Released Item Booklet

Arkansas Augmented Benchmark Examination

APRIL 2008 ADMINISTRATION

GRADE 8

Arkansas Department of Education

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PART I Overview–2008 Augmented Benchmark Grade 8

The criterion-referenced tests implemented as part of the **Arkansas Comprehensive Testing, Assessment, and Accountability Program** (ACTAAP) are being developed in response to Arkansas Legislative Act 35, which requires the State Board of Education to develop a comprehensive testing program that includes assessment of the challenging academic content standards defined by the Arkansas Curriculum Frameworks.

As part of this program, all Grade 8 students in Arkansas public schools participated in the *Grade 8 Augmented Benchmark Examination* in April 2008.

This *Released Item Booklet for the Grade 8 Augmented Benchmark Examination* contains test questions or items that were asked of students during the April 2008 operational administration. The test items included in Part II of this booklet are those items that contributed to the student performance results for that administration. **Please make note that only 50% of the 2008 criterion-referenced test items are released in this booklet.**

Students were given approximately two and a half hours each day to complete assigned test sessions during the four days of testing in April 2008. Students were permitted to use a calculator for the Mathematics items (both multiple-choice and open-response), with the exception of questions 1–3 in this *Released Item Booklet*. Students were also supplied with a reference sheet to be used during the Mathematics sessions so that all students would have equal access to this information during testing. (See the reference sheet on page 24 of this booklet.) All of the Reading, Writing, and Mathematics multiple-choice items within this booklet have the correct response marked with an answer hand. The open-response questions for Reading and Mathematics and the prompt for Writing are listed with scoring guides (rubrics) immediately following. These rubrics provide information on the scoring model used for each subject, with the scoring model for Writing defining the overall curricular and instructional link for that subject with the Arkansas *English Language Arts Curriculum Framework*. The domain scoring model, implemented within Arkansas for a number of years, illustrates the appropriate instructional approaches for Writing within the state.

The development of the *Grade 8 Augmented Benchmark Examination* was based on the Arkansas Curriculum Frameworks. These frameworks have common, distinct levels: *Strands*, which are broad concepts, *Content Standards* within each Strand, and *Student Learning Expectations* within each Content Standard. Abridged versions of the Arkansas *English Language Arts Curriculum Framework—Reading Strand*, Arkansas *English Language Arts Curriculum Framework—Writing Strand*, and Arkansas *Mathematics Curriculum Framework* can be found in Part III of this booklet. It is important to note that these abridged versions list only the predominant Strand, Content Standard, and Student Learning Expectation associated with each item. However, since many key concepts within the Arkansas Curriculum Frameworks are interrelated, in many cases there are other item correlations or associations across Strands, Content Standards, and Student Learning Expectations.

Part III of the *Released Item Booklet* also contains a tabular listing of both released and non-released items, aligned to the Strand, Content Standard, and Student Learning Expectation that each question was designed to assess. The multiple-choice and open-response items found on the *Grade 8 Augmented Benchmark Examination* were developed in close association with the Arkansas educational community. Arkansas teachers participated as members of Content Advisory Committees for each subject area, providing routine feedback and recommendations for all items. Part III of the *Released Item Booklet* provides Arkansas educators with specific information on how the *Grade 8 Augmented Benchmark Examination* items align or correlate with the Arkansas Curriculum Frameworks to provide models for classroom instruction.

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100000063145

Read this passage. Then answer multiple-choice questions 1 through 8 and open-response question 1.

Yia-Yia's Dance

by Laurie Halse Anderson

My Yia-Yia, my beautiful grandmother—she dances like a ribbon, like a smooth, sun-glinting, wind-tossed ribbon.

Yia-Yia was born in a tiny village in Greece. Her four brothers, her grandparents, and all the aunts, uncles, and cousins danced around a bonfire long into the night when she was born. Her mother and father had waited many years for a girl child. Their love for her was as deep as the sea. Her father took her outside to the happy relatives when she was only one hour old. She opened her eyes. She watched the firelight and smoke curl up to the stars that hung above their village.

3 Just as she was learning how to walk, the family packed up everything they owned and crossed the ocean in a ship. The sailors taught her how to dance to the music of a pipe, while sea gulls sang overhead.

When she got bigger, she twirled and whirled on her way to school in the morning. She snapped her fingers and clicked her heels on the way home in the afternoon. There was always work to be done at her house—floors to scrub and pots to wash and clothes to iron and schoolwork to finish late into the night at the kitchen table. She held a tune in her heart and tapped out a beat with her toes, so the time passed quickly by.

5 Back then my Papou stood tall and strong. He fell in love with the way Yia-Yia's black hair glowed in the candlelight of their church. He talked to each one of her four brothers and her father and then her mother to get permission to sit next to her on the stoop and drink lemonade. They ate sweet cakes she made with her slender hands. When he asked her to marry him he had a spot of honey on his chin.

At their wedding, her feet barely touched the ground. The voices of the singers and the perfume of the incense coiled around her heart and made her eyes wet. Wearing their wedding crowns, she and her beloved walked three times around the altar and became partners for life.

Later came babies—my mom, my Aunt Helena, and my Uncle Costas. Yia-Yia

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danced with them all so they wouldn't fuss. She played old records and whispered stories of a faraway village. With a baby in her arms, she hummed the tunes of far away. She high-stepped her way from the kitchen to the laundry room, from the grocery to the church. She tied back her long hair with scarves of blue and green.

When the children grew older she taught them the right steps: chin up, back straight, eyes clear and steady. She kissed Papou on the chin when he came home in the evening, tired from the mill. She pulled him to the soft chair and served him thick coffee and figs while dinner cooked.

9 Uncle Costas married Aunt Tessa, and Aunt Helena married Uncle Roy, and my mom married my dad. Then came the grandchildren—roly poly grandchildren who loved pastries and cookies and a spinning grandmother who hummed.

10 These days the best place to see my Yia-Yia dance is at the church festival. The guitar music rings in my ears, and the salty-sweet tastes of Greece fill my mouth. Yia-Yia and Papou sit at the end of a long table. They watch the young people dance in graceful lines that snake in and out of the room. They smile at their friends and wave to their children and grandchildren, but Yia-Yia does not dance . . . until the band plays the sailor's song. She takes the snow white handkerchief from Papou's jacket pocket and slides the scarf from her hair. Everyone in the room stops to watch her.

She dances. Her arms glide like the wings of a swan. Her feet stomp and her legs leap, harder and higher than the youngest girl. Her proud face is strong like the faces in the paintings in the church. The music grows louder, and her children and grandchildren cheer. She throws back her head. Her dark, silver-streaked hair comes alive like a moonless night lit by shimmering silver stars. And it curls in the air like the smoke rising from the village bonfire.

"Yia-Yia's Dance": Copyright © 1998 by Highlights for Children, Inc., Columbus, Ohio.

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PART II Released Reading Items—2008 Augmented Benchmark Grade 8

1 100000063146

What can the reader tell about Yia-Yia and Papou when they sit at the end of a table? (paragraph 10)

A They prefer to keep to themselves.
B They are usually the last to arrive at the festival.
☞ **C** They are the most respected people in the family.
D They have the best vantage point to watch the dancing.

2 100000063147

Based on the sentence in paragraph 5, "Back then my Papou stood tall and strong," what can the reader **most** likely infer?

A Papou no longer dances.
☞ **B** Papou has grown frail over the years.
C Papou and Yia-Yia have grown apart.
D Papou prefers to be remembered as young.

3 100000063148

"Then came the grandchildren—roly poly grandchildren who loved pastries and cookies and a spinning grandmother who hummed." (paragraph 9)

What does the above sentence **best** accomplish?

☞ **A** It creates a playful tone.
B It relates conflicting ideas.
C It describes time as being unending.
D It distinguishes the characters from one another.

4 100000063149

Which word **best** describes the author's view of her grandmother?

☞ **A** affectionate
B mysterious
C conflicted
D troubled

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5 100000063150

Which statement would Yia-Yia **most** likely make?

A I wish I still had the love and support of my family.
☞ **B** I dance to express the happiness I have felt throughout my life.
C I am glad I took advantage of the opportunities I had to get ahead.
D I raised my children to be independent and take care of themselves.

6 100000063155

The narrator uses a simile to compare her grandmother's dancing to

A music.
B firelight.
☞ **C** a ribbon.
D the wind.

7 100000063151

Yia-Yia's life can **best** be described in which way?

☞ **A** happy and satisfying
B challenging and hard
C daring and adventurous
D wealthy and comfortable

8 100000063152

How does paragraph 3 affect the plot in this passage?

A It expresses the first time Yia-Yia heard music.
B It shows that conflicts often remain unresolved.
☞ **C** It describes an important change in Yia-Yia's life.
D It contradicts a statement made earlier in the passage.

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100000044936

Read the following passage about pencils. Then answer multiple-choice questions 9 through 16 and open-response question 2.

Pencil Pirates

by Linda K. Zoeller

Grab a pencil and take a look. Would you hire armed guards to protect it? Can you think of a reason why a country would create special laws to prevent the smuggling and stealing of pencils? In fact, can you imagine that punishment for breaking such laws could result in years of hard labor or expulsion from your country? Well, sharpen that pencil. Do you see the lead? People once considered graphite in pencil leads to be just that special.

2 It all started over 500 years ago after a wet and windy storm. In Borrowdale, England, villagers watched as sheets of rain and the howling wind tore across their valley. When the sun finally broke through, the shepherds led their sheep out into the fresh, clear morning to graze and found trees pulled up by the roots. Patches of black peppered the ground where the trees once stood. No one had a clue what the black stuff could be. At first people thought it was coal, only it wouldn't burn. Then shepherds saw that it left smudges on everything it touched, so they began marking their sheep with the material.

Sheep marking turned out to be only the first use. Soon the material called wad by the locals, and today known as graphite, began being mined by local businesspeople. They found uses for it in a variety of products, from medicines to cannonball molds. And by wrapping sheepskin around a chunk of graphite, they created pencils.

The value of graphite grew. Thieves looked for ways to steal it either from the mine or while it was being transported to other parts of England. They profited by selling it to people in foreign countries. In order to end this thievery, the English government made the mine state property and passed strict laws against stealing or smuggling the rock. Soldiers guarded the mineral as it traveled in stagecoaches from Borrowdale to London.

In Continental Europe, famous for its drawings, paintings, and statues, artists clamored for the new pencils. The rods of lead that had been used left only a thin, light line. This new tool provided a soft medium for drawing, but the sheepskin-covered chunks seemed awkward in the artists' skilled hands. They needed to change the design. An artist carved a groove into a piece of wood and rested a slab of the graphite in the slit. Then the graphite was polished until it lay smoothly and evenly with the surface of the wood. A second piece of wood glued

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on top finished the pencil. This design improved the pencil for use in creating delicate drawings. But even great artists make mistakes, so they learned to rub out the graphite with breadcrumbs—the first erasers.

People in Borrowdale studied the new pencil design and created a business making wad pencils. Since only the Borrowdale graphite worked in pencils, local craftsmen were determined to lock up the pencil-making trade. But a Frenchman named Nicholas Jacques Conté ruined things for the Borrowdale pencil-makers.

7 Conté pulverized the soft, shapeless graphite found all over the world—thought to be useless in terms of pencil making—and mixed it with clay. He then placed the mixture in a furnace. The resulting material could be used to make pencils. Not only did this process produce a material to replace the wad pencils, it improved pencil leads—resulting in pencils of varying hardness.

What difference does hardness make? Check out your pencil. Do you see a number? If the number is a four, the pencil lead leaves less graphite on the paper than if the number is a two. A hard pencil makes a lighter line. Teachers usually request number two pencils so they can easily read your answers. Artists use harder pencils for different effects in their drawings.

About the same time Conté developed the new pencil lead, rubber replaced breadcrumbs as erasers. It took 80 years to learn how to attach the rubber to the pencil. But with that knowledge, the modern pencil had arrived, and an industry was born.

Americans use over 2.8 billion pencils every year. Manufacturing that many pencils requires large factories, but the production processes used today are not much different from those used in earlier times. Workers mix graphite and clay, then toss the material into giant drums. The powder still goes into a furnace, but now the material passes through several stages of drying, wetting, and crushing to form a paste. The paste runs through metal tubes to form thin spaghetti-like rods—the pencils' lead.

Take a look at that pencil one more time. Does it look like the Continental European design of two pieces of wood glued together? Modern pencil-makers still use that old technique. They have improved upon it, though, because pencil manufacturers must make billions of pencils. Now they use woodworking tools on large blocks of wood so that they are able to produce eight pencils at a time rather than one.

Modern pencil-making begins with machines that carve grooves into cedar blocks. Workers then drop eight lead rods into the slits and glue the two blocks of wood together. Cutting machines shape each side of the wood to make a smooth circle or sharp angles. With the edges shaped to meet the final design of the pencil, the wood is separated into eight pencils. Finally, machines apply layers of paint to cover the wood seams. A hot metal stamp burns a number on the side to indicate the pencil lead's level of hardness, and a metal band around one end of the pencil secures a rubber eraser.

Soldiers no longer need to guard today's pencil leads, and no one tries to smuggle a pencil anymore. But just think, if billions of pencils are used each year, and one pencil can write over 45,000 words, maybe the real value of a pencil lies in the ideas, the pictures, and the math it helps create.

"Pencil Pirates": By Linda K. Zoeller. Reprinted by permission of CRICKET magazine, September 2004, Vol. 2, No. 1, text copyright © 2005 by Carus Publishing.

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9 100000044937

Why was Nicholas Jacques Conté's new process such an important step in the history of pencil making?

A It produced the first pencils with built-in erasers.
☞ **B** It could be used to make pencils that varied in hardness.
C It was much faster than the process used in Borrowdale.
D It did not require as much raw material as earlier processes.

10 100000044938

What type of mark would a number 4 pencil make?

☞ **A** light
B dark
C smeared
D permanent

11 100000044942

What is the **most** likely meaning for pulverized as it is used in paragraph 7?

A heated
B carved
C melted
☞ **D** crushed

12 100000044943

What is ironic about the excitement over the invention of the pencil 500 years ago?

A Today, pencils come in many colors.
☞ **B** Today, the pencil is taken for granted.
C Long ago, inventions were considered evil.
D Long ago, new inventions were created every day.

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13 100000044939

According to the passage, what is more valuable than the graphite used to make early pencils?

A pencil leads that vary in hardness
B newer innovations, such as ballpoint pens
☞ **C** words and pictures that are made using pencils
D other minerals that are mined along with graphite

14 100000044944

In paragraph 2, the word peppered gives the reader an image of the ground being

A wet with dew.
B filled with holes.
C coated with rocks.
☞ **D** covered with black spots.

15 100000044940

Graphite is also used to make which item?

A pens
B erasers
☞ **C** medicines
D sheepskins

16 100000044941

Which is a theme of "Pencil Pirates"?

A People always try to make money any way they can.
☞ **B** Even everyday things can have an interesting history.
C It is hard to know the whole truth about historical events.
D Early pencil making was very different from the modern way.

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READING OPEN RESPONSE ITEM 1, FOR PASSAGE "YIA-YIA'S DANCE"

1

100000063157

Describe a way in which Yia-Yia is **different** at the end of the passage. Describe a way in which she is the same. Provide two examples from the passage to support your response.

RUBRIC FOR READING OPEN RESPONSE ITEM 1, FOR PASSAGE "YIA-YIA'S DANCE"

SCORE	DESCRIPTION
4	Response accurately describes a difference, a similarity, and provides two examples from the passage to support the response.
3	Response accurately describes a difference, a similarity, and provides one example from the passage to support the response, OR response accurately describes a difference and provides two examples to support the response OR response accurately describes a similarity and provides two examples to support the response.
2	Response accurately describes a difference and similarity, OR response accurately describes a difference and provides one example from the passage to support the response OR response accurately describes a similarity and provides one example from the passage to support the response.
1	Response accurately describes a difference OR response accurately describes a similarity.
0	Response is incorrect or irrelevant.

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READING OPEN RESPONSE ITEM 2, FOR PASSAGE "PENCIL PIRATES"

2

100000044945

Different kinds of pencil leads are identified by numbers that indicate the hardness of the lead. Identify what kind of lead is **most** commonly used in schools. Explain what it means when a pencil lead is hard, and provide an example of why someone might choose a pencil with a harder lead.

RUBRIC FOR READING OPEN RESPONSE ITEM 2, FOR PASSAGE "PENCIL PIRATES"

SCORE	DESCRIPTION
4	Response identifies the most common pencil lead used in schools, explains the significance of harder lead, and correctly provides an example of why someone chooses a pencil with a harder lead.
3	Response identifies the most common pencil lead used in schools and explains the significance of harder lead OR response explains the significance of harder lead and correctly provides an example of why someone would choose a pencil with a harder lead OR student correctly identifies the most common pencil lead used in schools and correctly provides an example of why someone would choose a pencil with a harder lead.
2	Response identifies the most common pencil lead used in schools OR explains the significance of harder lead OR response correctly provides an example of why someone chooses a pencil with a harder lead.
1	Response shows misinterpretation of some part of the question, but demonstrates some reading comprehension.
0	Response shows no understanding of the task; it may be inaccurate or irrelevant. Response demonstrates no reading comprehension.

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PART II Released Writing Items—2008 Augmented Benchmark Grade 8

1 100000041750

Maggie won a piano competition last weekend. The competition was sponsored by Arkansas music teachers.

Which is the **best** way to combine the sentences above, using an adverb phrase?

A Arkansas music teachers sponsored the piano competition, and it was won by Maggie.
☞ **B** Last weekend, Maggie won a piano competition sponsored by Arkansas music teachers.
C The piano competition that was sponsored by Arkansas music teachers was won by Maggie.
D Maggie won a piano competition last weekend, and it was sponsored by Arkansas music teachers.

2 100000041751

On July 30 2003 my family moved to 134 Oak Lane Jonesboro Arkansas.

Which is the **best** way to edit the punctuation in the sentence above?

A On July 30, 2003 my family moved to 134 Oak Lane, Jonesboro Arkansas.
B On July 30 2003, my family moved to 134 Oak Lane, Jonesboro, Arkansas.
C On July 30, 2003, my family moved to 134, Oak Lane, Jonesboro, Arkansas.
☞ **D** On July 30, 2003, my family moved to 134 Oak Lane, Jonesboro, Arkansas.

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PART II Released Writing Prompt–2008 Augmented Benchmark Grade 8

Writing Prompt

W07PR801 100000061005

Your teacher has asked students to write an essay on the following topic:

What leader has had an impact on your life?

Before you begin to write, think about a leader (for example, a coach, advisor, teacher, or team captain) who has been important in your life. Who is this person and why is he or she important? How has this person had an impact on your life?

Now write an essay for your teacher about a leader who has had an impact on your life. Give enough detail so that your teacher will understand.

Writer's Checklist

1. Look at the ideas in your response.

   — Have you focused on one main idea?
   — Have you used enough details to explain yourself?
   — Have you put your thoughts in order?
   — Can others understand what you are saying?

2. Think about what you want others to know and feel after reading your paper.

   — Will others understand how you think or feel about an idea?
   — Will others feel angry, sad, happy, surprised, or some other way about your response? (Hint: Make your reader feel like you do about your paper's subject.)
   — Do you have sentences of different lengths? (Hint: Be sure you have variety in sentence lengths.)
   — Are your sentences alike? (Hint: Use different kinds of sentences.)

3. Look at the words you have used.

   — Have you described things, places, and people the way they are? (Hint: Use enough detail.)
   — Are you the same person all the way through your paper? (Hint: Check your verbs and pronouns.)
   — Have you used the right words in the right places?

4. Look at your handwriting.

   — Can others read your handwriting with no trouble?

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PART II Released Writing Prompt–2008 Augmented Benchmark Grade 8

Domain Scoring Rubric

Content (C)
The Content domain includes the focusing, structuring, and elaborating that a writer does to construct an effective message for a reader. It is the creation of a product, the building of a composition intended to be read. The writer crafts his/her message for the reader by focusing on a central idea, providing elaboration of the central idea, and delivering the central idea and its elaboration in an organized text. Features are:

• Central idea • Elaboration • Unity • Organization

Style (S)
The Style domain comprises those features that show the writer purposefully shaping and controlling language to affect readers. This domain focuses on the vividness, specificity, and rhythm of the piece and the writer's attitude and presence. Features are:

• Selected vocabulary • Selected information • Sentence variety • Tone • Voice

Sentence Formation (F)
The Sentence Formation domain reflects the writer's ability to form competent, appropriately mature sentences to express his/her thoughts. Features are:

• Completeness • Standard word order • Absence of fused sentences
• Expansion through standard coordination and modifiers • Embedding through standard subordination and modifiers

Usage (U)
The Usage domain comprises the writer's use of word-level features that cause written language to be acceptable and effective for standard discourse. Features are:

• Standard inflections • Agreement • Word meaning • Conventions

Mechanics (M)
The Mechanics domain includes the system of symbols and cueing devices a writer uses to help readers make meaning. Features are:

• Capitalization • Punctuation • Formatting • Spelling

Scoring Scale
Each domain is scored independently using the following scale:
4 = The writer demonstrates **consistent**, though not necessarily perfect, control* of almost all of the domain's features.
3 = The writer demonstrates **reasonable**, but not consistent, control* of most of the domain's features, indicating some weakness in the domain.
2 = The writer demonstrates **inconsistent control*** of several of the domain's features, indicating significant weakness in the domain.
1 = The writer demonstrates **little** or **no** control* of most of the domain's features.

*Control: The ability to use a given feature of written language effectively at the appropriate grade level. A response receives a higher score to the extent that it demonstrates control of the features in each domain.

The application of the scale, using actual student writing, is done with the assistance of a committee of Arkansas teachers, language arts supervisors, and representatives of the Arkansas Department of Education.

Non-scoreable and Blank Papers
Compositions are scored, unless they are off-topic, illegible, incoherent, refusals to respond, written in a language other than English, or too brief to assess. A score of "NA" indicates that the student's writing entry was non-scoreable and that entry will receive a score of "0."

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PART II Released Mathematics Items–2008 Augmented Benchmark Grade 8

CALCULATOR NOT PERMITTED–ITEMS 1–3

1 100000044857

The drama club members are sewing costumes for the spring musical. Each costume requires 24 inches of lace.

How many total yards of lace are needed for 18 costumes?

☞ **A** 12 yards
B 18 yards
C 24 yards
D 36 yards

2 100000044808

Which statement about the properties of quadrilaterals is **correct**?

A All rectangles are squares.
☞ **B** All rectangles are parallelograms.
C All parallelograms are rectangles.
D All quadrilaterals are parallelograms.

3 100000044830

Juanita bought 2 skirts and a blouse for $110. If the cost of each skirt is 3 times the cost of the blouse, for which algebraic equation would the value of x equal the cost of 1 blouse?

A $x + 3x = 110$
B $x + x + 2x = 110$
C $x + 2x + 3x = 110$
☞ **D** $x + 3x + 3x = 110$

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PART II Released Mathematics Items–2008 Augmented Benchmark Grade 8

CALCULATOR PERMITTED–ITEMS 4–10 and 1–2

4 100000044791

The boys in Mrs. Raymond's class are collecting aluminum cans for charity. The data below shows the number of cans each boy collected.

Cans Collected for Charity

Boy	Number of Cans
Ian	206
Jesse	250
John	145
Mark	293
Pepper	190
Silas	182

What is the median number of aluminum cans collected by the 6 boys?

A 190
☞ **B** 198
C 211
D 219

5 100000044776

Quinton knows that a distance of 30 miles on a map is represented by a line $\frac{1}{4}$ inches long.

If he is estimating the length of a line to represent 315 miles, **approximately** how long is the line?

A 2 in.
☞ **B** $2\frac{1}{2}$ in.
C $3\frac{1}{4}$ in.
D $3\frac{1}{2}$ in.

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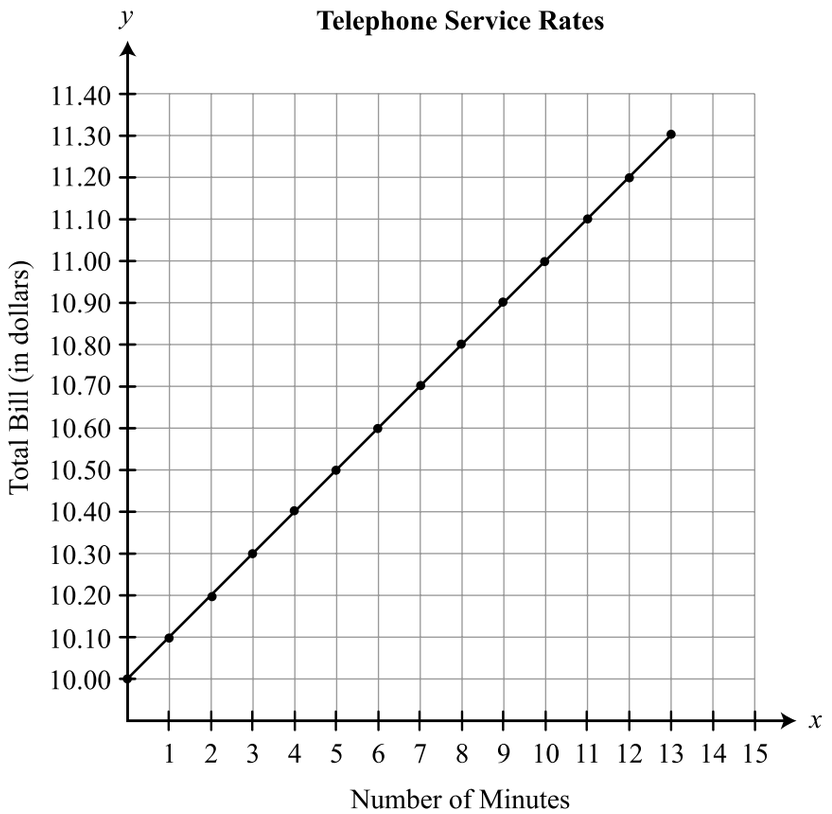
6

100000044834

A telephone company offers a service plan that is shown on the graph below.



What is the equation of this line?

A $y = 0.10x + 10$
B $y = 10x + 0.10$
C $y = 10x + 10$
D $y = 0x + 10$

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7 100000044773

What is the value of the expression below?

$$-2\frac{2}{3} \div 3\frac{1}{5}$$

☞ **A** $-\frac{5}{6}$

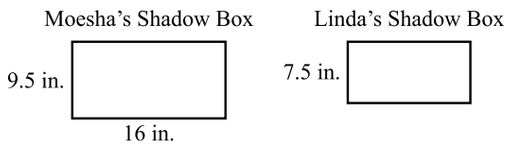
B $\frac{5}{6}$

C $7\frac{1}{9}$

D $-7\frac{1}{9}$

8 100000044817

Moesha and Linda are making shadow boxes in woodworking class, as shown below. Their two boxes are similar.



What is the length of Linda's box?

A 9.5 inches

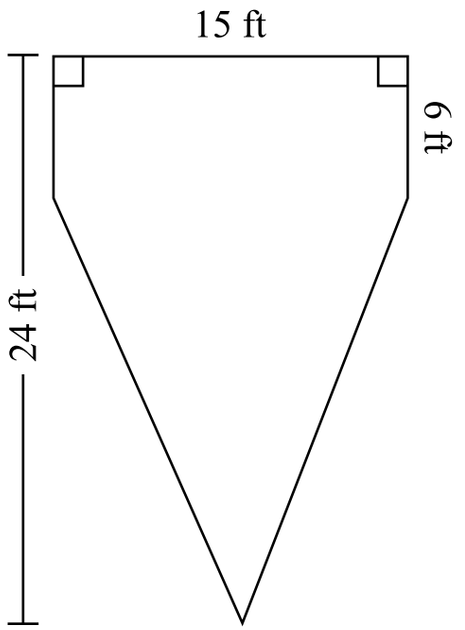
☞ **B** 12.6 inches

C 14.0 inches

D 15.0 inches

9 100000044852

The figure shown below represents an area that will be planted with grass.



What is the total area that will be planted with grass?

A 90 square feet

B 135 square feet

☞ **C** 225 square feet

D 360 square feet

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10

100000044796

Deb and Antoinette used a polyhedral die with 10 sides to play a game. They threw the die 100 times and recorded their results in the table below.

100 Throws of Polyhedral Die

Number on Die	1	2	3	4	5	6	7	8	9	10
Number of Times Rolled	14	17	12	7	10	8	12	5	11	4

Based on the data, what is the experimental probability that Deb will throw a 7 on her next roll?

☞ **A** 3 out of 25
B 1 out of 20
C 1 out of 10
D 4 out of 5

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MATHEMATICS OPEN RESPONSE ITEM 1

1

100000044823

Doug built a flower box for his mother. The width of the flower box is 11 inches, the height is 8 inches, and the length is 34 inches.

1. Doug's mother places dirt in the flower box. She does not fill the flower box to the top with dirt and instead leaves 2 inches at the top. What is the amount of dirt she will use? Show your work and/or explain your answer.
2. Frances also built a flower box. The volume of her flower box is 5,843.75 cubic inches. The dimensions of Frances's flower box are 25% greater than the dimensions of Doug's flower box. The width of Frances's flower box is $13\frac{3}{4}$ inches. What is the height and length of Frances's flower box? Show your work and/or explain your answer.

BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

RUBRIC FOR MATHEMATICS OPEN RESPONSE ITEM 1

SCORE	DESCRIPTION
4	Correct labels in Parts 1 and 2. Response contains no incorrect work.
3	The student earns 3 points.
2	The student earns 2 points.
1	1 or some minimal understanding is shown.
0	Blank–No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

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Solution and Scoring

Part	Points
1	**2 points possible** 1 point: Correct answer: 2244 (cubic inches) or 1.2986 – 1.3 (ft^3) Note: Label of "cubic inches" or " ft^3 " only required at the "4" level **And** 1 point: Correct and complete procedure shown and/or explained Work may contain a calculation or copy error Give credit for the following or equivalent: • 6 x 11 x 34 = # or • "If Doug's mom leaves 2 inches from the top, the height of the flower box would be 6 inches. The width is 11 and length is 34. If I multiply the 3 numbers I'll get the volume."
2	**2 points possible** 2 points: Correct **height of 10** (in,) and **length of 42.5** (in.), Correct and complete procedure shown and/or explained Note: Labels are required at the "4" level. Give credit for the following or equivalent: • Height: 8 × .25 = 2; 8 + 2 = 10 — Length: 34 × .25 = 8.5; 34 + 8.5 = 42.5 **Or** • $H = 1.25(8) = 10$ $V = LWH = 5843.75$ $L = 5843.75 \div (10)(13.75) = 5843.75 \div 137.5 = 42.5$ **Or** 1 point: Give credit for the following: • Correct height and length but work is incomplete or missing Must be identified or labeled **Or** • H or L is incorrect due to a calculation error Correct procedures are shown Ex: H = 1.25 x 8 = 15, L = 1.25 x 34 = 42.5 Ex: H = ¼ (8) = 2, 2+8 = 10, L = ¼ (34) = 8, 8 + 34 = 42 or • Either correct height or length with correct and complete procedure

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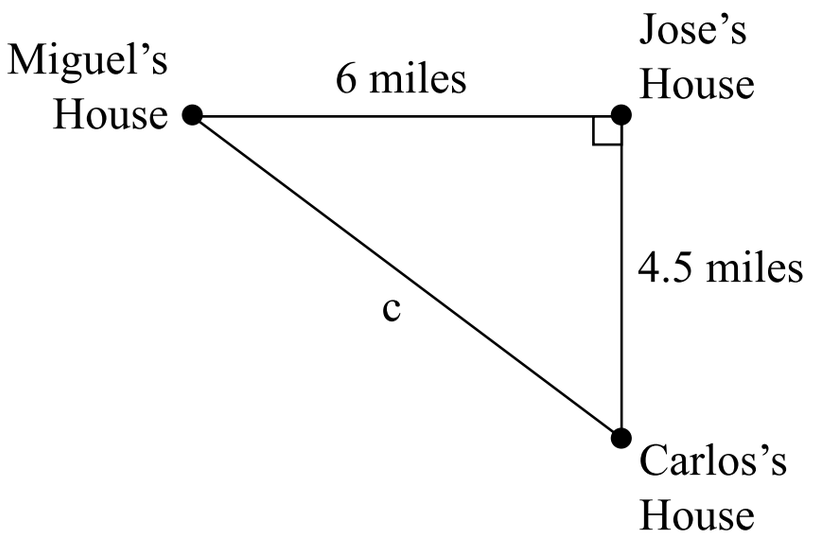
MATHEMATICS OPEN RESPONSE ITEM 2

2

100000044819

The figure below shows the distance between three houses.



1. What is the shortest distance, in miles, that Carlos will have to ride his bicycle to visit his friend Miguel? Show all your work and/or explain your answer.

2. If it takes Carlos 30 minutes to ride his bicycle to Miguel's house, at what speed, in miles per hour, is he traveling? Show all your work and/or explain your answer.

BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

RUBRIC FOR MATHEMATICS OPEN RESPONSE ITEM 2

SCORE	DESCRIPTION
4	Response contains no incorrect work.
3	The student earns 3 points.
2	The student earns 2 points.
1	1 or some minimal understanding is shown. • For minimal understanding in Part 1, shows the correct use of the Pythagorean Theorem with no more than 1 calculation error • For minimal understanding in Part 2, response uses the "distance formula" (d=rt) with correct substitutions
0	Blank–No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

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Solution and Scoring

Part	Points
1	**2 points possible** 1 point: Correct answer: **7.5** (miles) Ex: √ 56.25 Note: The label "miles" is not required at any level. **And** 1 point: Correct and complete procedure shown and/or explained Work may contain a calculation or copy error Give credit for the following or equivalent: • $(6)^2 + (4.5)^2 = c^2$ $36 + 20.25 = c^2$ $56.25 = c^2$ $c = \#$ • Uses proportional reasoning with measurement or "Pythagorean Triple"
2	**2 points possible** 1 point: Correct answer: **15** (mph) **Or** Correct answer based on incorrect response in Part 1 Note: The label "mph" is not required at any level. **And** 1 point: Correct and complete procedure shown and/or explained Work may contain a calculation or copy error and may be based on an incorrect response in Part 1 Give credit for the following or equivalent: • $rt = d$ $r(.5) = 7.5$ $r = \#$ mph • "I divided the distance of 7.5 by the # of hours (½) to get my answer." • "If it takes him 30 minutes to go 7.5 miles, then he would go twice that - or 15 miles - in 1 hour."

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Mathematics Reference Sheet
Grade 8

Use the information below, as needed, to answer questions on the Mathematics test.

Square Area = s^2 Perimeter = $4s$	**Rectangle** Area = lw Perimeter = $2(l + w)$	**Triangle** Area = $\frac{1}{2}bh$ Perimeter = $a + b + c$
Circle Area = πr^2 Circumference = $2\pi r$	**Parallelogram** Area = bh Perimeter = $2a + 2b$	**Equilateral Triangle** Perimeter = $3s$
Cube Volume = s^3	**Cone** Volume = $\frac{1}{3}\pi r^2 h$ Surface Area = $\pi rl + \pi r^2$ Slant Height = l	**Rectangular Prism** Volume = lwh
Pyramid Volume = $\frac{1}{3}$ (area of base)h	**Sphere** Volume = $\frac{4}{3}\pi r^3$ Surface Area = $4\pi r^2$	**Cylinder** Volume = $\pi r^2 h$ Surface Area = $2\pi rh + 2\pi r^2$
		Trapezoid Area = $\frac{1}{2}h(b_1 + b_2)$

Miscellaneous Formulas and Conversions

Sum of interior angles of a polygon having n sides: $(n-2)180°$

Slope of (non-vertical) line: $m = \frac{y_2 - y_1}{x_2 - x_1}$

Distance between points on a coordinate plane: $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Midpoint: $\left(\frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2}\right)$

1 foot = 12 inches
1 yard = 3 feet
1 mile = 5,280 feet

$\pi \approx 3.14$

1 cup = 8 ounces (oz)
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

1 kilogram = 1000 grams
1 meter = 100 centimeters
1 decimeter = 10 centimeters
1 centimeter = 10 millimeters
1 kilometer = 1000 meters
1 liter = 1000 milliliters

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PART III Item Correlation with Curriculum Frameworks—2008 Augmented Benchmark Grade 8

The Arkansas *English Language Arts Framework—Reading Strand**

Content Standards	Student Learning Expectations
9. Comprehension: Students shall apply a variety of strategies to read and comprehend printed material.	5. Generate and define questions related to universal themes to interpret meaning 7. Connect own background knowledge and personal experience to make inferences and to respond to new information presented in text 8. Infer a character's role in development of plot and theme 9. Infer mood and theme of text 10. Use literary elements and historical context to infer author's intent 12. Compare and contrast points of view, such as first person, limited, and omniscient third person, and explain the effect on the overall theme of a literary work 15. Identify main ideas and supporting evidence in short stories and novels 19. Use skimming, scanning, notetaking, outlining, and questioning as study strategies 21. Evaluate conflicts, motivations, points of view, and changes that affect the plot or theme
11. Vocabulary, Word Study, and Fluency: Students shall acquire and apply skills in vocabulary development and word analysis to be able to read fluently.	8. Identify and explains similes, metaphors, personification, hyperboles and analogies to infer the literal and figurative meanings of phrases 10. Use context, structure, denotations and connotations to determine meaning of words and phrases

*The Content Standards and Student Learning Expectations listed are those that specifically relate to the released test items in this booklet.

Released Items for Reading*

Item	Content Standard	Student Learning Expectation	Passage Type
1	9	7	Literary
2	9	21	Literary
3	9	10	Literary
4	9	8	Literary
5	9	12	Literary
6	11	8	Literary
7	9	9	Literary
8	9	21	Literary
9	9	15	Content
10	9	15	Content
11	11	10	Content
12	11	8	Content
13	9	5	Content
14	11	8	Content
15	9	19	Content
16	9	5	Content
1	9	21	Literary
2	9	19	Content

Non-Released Items for Reading*

Item	Content Standard	Student Learning Expectation	Passage Type
1	9	7	Practical
2	9	15	Practical
3	10	4	Practical
4	10	4	Practical
5	9	14	Practical
6	11	10	Practical
7	11	5	Practical
8	9	7	Practical
9	10	12	Practical

*Only the predominant Strand, Content Standard, and Student Learning Expectation is listed.

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PART III Item Correlation with Curriculum Frameworks—2008 Augmented Benchmark Grade 8

The Arkansas *English Language Arts Framework—Writing Strand**

Content Standards	Student Learning Expectations
6. Conventions: Students shall apply knowledge of Standard English conventions in written work.	2. Write more effective sentences by using all compound elements and by embedding clauses and prepositional, appositive, and verbal phrases 9. Apply conventional rules of punctuation in writing

*The Content Standards and Student Learning Expectations listed are those that specifically relate to the released test items in this booklet.

Released Items for Writing*

Item	Content Standard	Student Learning Expectation
1	6	2
2	6	9

Non-Released Items for Writing*

Item	Content Standard	Student Learning Expectation
1	6	4
2	6	3

*Only the predominant Strand, Content Standard, and Student Learning Expectation is listed.

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PART III Item Correlation with Curriculum Frameworks– 2008 Augmented Benchmark Grade 8

The Arkansas *Mathematics Curriculum Framework**

Strands	Content Standards	Student Learning Expectations
Number and Operations	2. Properties of Number Operations: Students shall understand meanings of operations and how they relate to one another.	5. Model and develop addition, subtraction, multiplication and division of *rational numbers* Ex. $-8\frac{1}{2} + 2\frac{3}{4}$
	3. Numerical Operations and Estimation: Students shall compute fluently and make reasonable estimates.	3. Use *estimation* to solve problems involving *rational numbers*; including *ratio, proportion, percent* (increase or decrease) then judge the reasonableness of solutions
Algebra	4. Patterns, Relations and Functions: Students shall recognize, describe, and develop patterns, relations and functions	3. Interpret and represent a two operation *function* as an *algebraic equation* Ex. $y = 2x + 1$
	6. Algebraic Models: Students shall develop and apply mathematical models to represent and understand quantitative relationships	1. Describe, with and without appropriate *technology*, the relationship between the graph of a line and its equation, including being able to explain the meaning of slope as a constant rate of change (rise/run) and *y-intercept* in real world problems
Geometry	8. Geometric Properties: Students shall analyze characteristics and properties of 2 and 3 dimensional geometric shapes and develop mathematical arguments about geometric relationships	1. Form generalizations and validate conclusions about properties of geometric shapes 3. Determine appropriate application of geometric ideas and relationships, such as *congruence*, similarity, and the *Pythagorean theorem*, with and without appropriate *technology*
Measurement	12. Physical Attributes: Students shall use attributes and tools of measurement to describe and compare mathematical and real-world objects	1. Understand, select and use, with and without appropriate *technology*, the appropriate units and tools to measure angles, *perimeter, area, surface area* and *volume* to solve real world problems 2. Describe and apply equivalent measures using a variety of units within the same system of measurement
	13. Systems of Measurement: Students shall identify and use units, systems and processes of measurement	5. Estimate and compute the *area* of irregular *two-dimensional* shapes
Data Analysis and Probability	15. Data Analysis: Students shall select and use appropriate statistical methods to analyze data	3. Given at least one of the measures of *central tendency* create a data set
	17. Probability: Students shall understand and apply basic concepts of probability	2. Make predictions based on *theoretical probabilities*, design and conduct an experiment to test the predictions, compare actual results to predict results, and explain differences Ex. suggested materials for simulations are: polyhedra die, random number table, and *technology*

*The Content Standards and Student Learning Expectations listed are those that specifically relate to the released test items in this booklet.

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PART III Item Correlation with Curriculum Frameworks– 2008 Augmented Benchmark Grade 8

Released Items for Mathematics*

Item	Strand	Content Standard	Student Learning Expectation
1	M	12	2
2	G	8	1
3	A	4	3
4	D	15	3
5	N	3	3
6	A	6	1
7	N	2	5
8	G	8	3
9	M	13	5
10	D	17	2
1	M	12	1
2	G	8	3

*Only the predominant Strand, Content Standard, and Student Learning Expectation is listed.

Non-Released Items for Mathematics*

Item	Strand	Content Standard	Student Learning Expectation
1	D	14	2
2	N	1	2
3	M	12	2
4	A	5	4
5	N	2	4
6	G	11	1
7	A	4	1
8	D	16	1
9	G	8	3
10	A	7	1
11	D	14	3
12	D	15	3
13	G	10	1
14	G	9	2
15	G	8	2
16	D	15	2
17	A	6	2
18	N	1	1

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ACTAAP

Arkansas Comprehensive Testing, Assessment, and Accountability Program

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