ACTAAP

Arkansas Comprehensive Testing, Assessment, and Accountability Program

Released Item Booklet

Grade 8

Augmented Benchmark Examination

April 2011

Arkansas Department of Education

Table of Contents—2011 Augmented Benchmark Grade 8

Part I Overview—2011 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 2011.

This Released Item Booklet for the *Grade 8 Augmented Benchmark Examination* contains test questions or items that were asked of students during the April 2011 operational administration. The test items included in Part II of this booklet are some of the items that contributed to the student performance results for that administration.

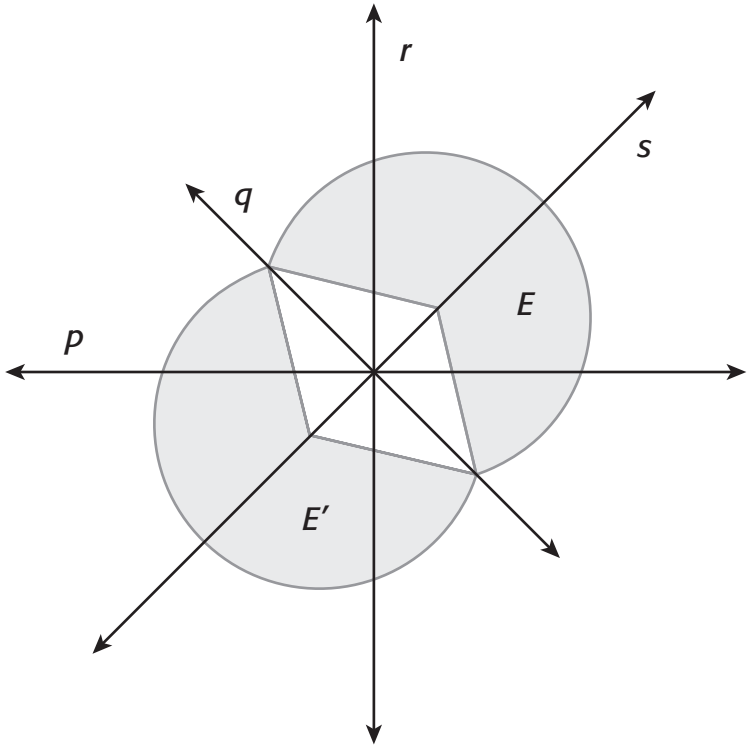
Students were given approximately two hours each day to complete assigned test sessions during the four days of testing in April 2011. Students were permitted to use a calculator for the mathematics items (both multiple-choice and open-response items), with the exception of questions 1–5 in this Released Item Booklet (items 1–10 in the test 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 22 of this booklet.) All of the mathematics and reading multiple-choice items within this booklet have the correct response marked with an asterisk (*). The open-response questions for mathematics, reading, and the essay 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 to be taught in concert, Content Standards within each Strand, and Student Learning Expectations within each Content Standard. Abridged versions of the *Arkansas Mathematics Curriculum Framework*, *Arkansas English Language Arts Curriculum Framework—Reading Strand,* and the *Arkansas English Language Arts Curriculum Framework—Writing Strand* 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 contains a tabular listing of 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 education community. Arkansas teachers participated as members of the Content Advisory Committee, for each subject area, providing routine feedback and recommendations for all items. The number of items associated with specific Strands, Content Standards, and Student Learning Expectations was based on approximate proportions suggested by the Content Advisory Committee, and their recommendations were accommodated to the greatest extent possible given the overall test design. 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.

CALCULATOR NOT PERMITTED—ITEMS 1–5

1 A student transformed figure E onto figure E' using a line of symmetry.



What line of symmetry was used in the transformation?

A Line p
* **B** Line q
C Line r
D Line s

2 The figure below shows the actual size of a piece of gum.

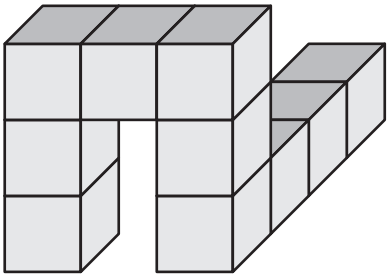
What is the actual length of the piece of gum to the nearest millimeter?

A 6.4
B 7.2
C 64
* **D** 72

3 Lily wants to conduct an opinion survey at her middle school using a sample set that would best represent the entire school. Which of the following groups of students should be the best sample set for Lily to survey?

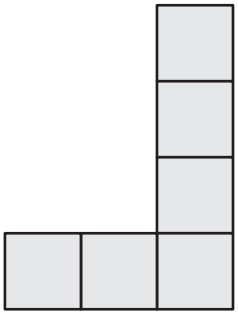
A Half of the students enrolled in 8th grade English
* **B** Every 15th student who enters school one morning
C Every 10th student buying a ticket to the football game
D Half of the students who belong to school-sponsored clubs

4 The diagram below is of a three-dimensional figure made of 10 cubes.

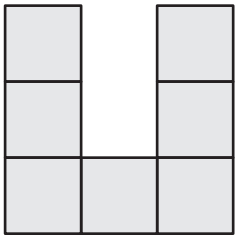


Which of the following best represents the top view of this figure?

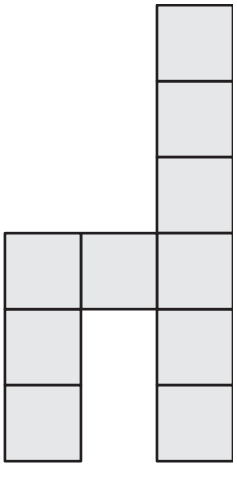
* **A**



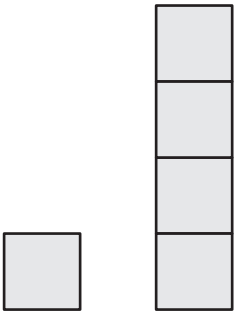
B



C



D



5 The variables a and b represent real numbers, and b is not 0.

Which statement describes the relation between a and b if $a\left(\frac{1}{b}\right)=1$?

* **A** $a=b$

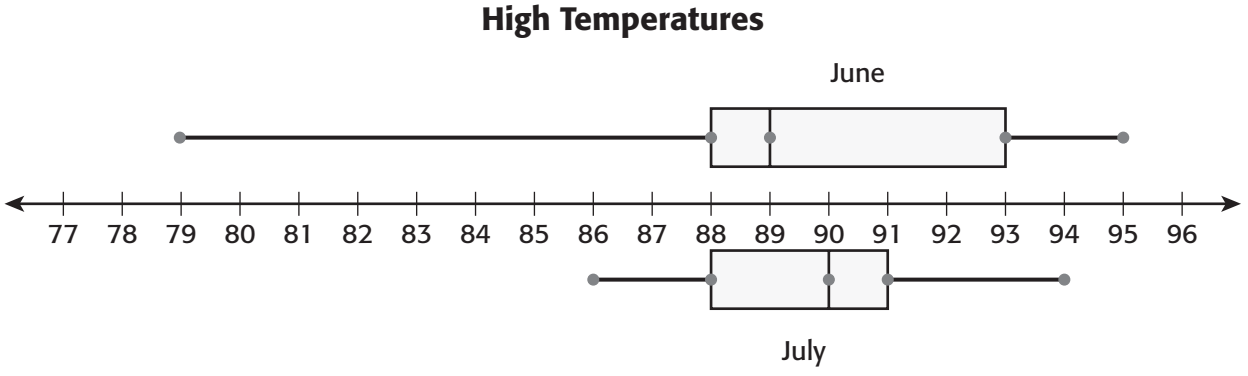
B $a=1-b$

C $a>b$

D $a<b$

CALCULATOR PERMITTED—ITEMS 6–20 and A–C

6 Michael recorded the daily high temperature in Little Rock each day during June and July. He represented this data set in the double box-and-whisker plot shown.



Which best represents the difference in the median daily high temperatures for June and July?

A 0°F *** B** 1°F **C** 2°F **D** 7°F

7 A cone has a height of 5 inches and a circumference of 56.52 inches.

Which measurement is closest to the volume of the cone in cubic inches? Use 3.14 for π.

A 1695.6
B 1271.7
C 887.36
*** D** 423.9

8 Erin uses the inequality shown to calculate the number of questions, q, she can miss on her quiz and still earn at least an 80 on the quiz.

$$80 \leq 100 - 5q$$

Which inequality represents the number of questions Erin can miss on her quiz?

*** A** $q \leq 4$
B $q \geq 4$
C $q \leq 16$
D $q \geq 16$

9 Matt has 8 note cards in a bag labeled with the letters in the word "ARKANSAS." He creates a logic grid to calculate the probability of randomly picking 1 note card, returning it to the bag, and randomly picking a second note card.

First Pick \ Second Pick	A	R	K	A	N	S	A	S
A	AA	AR	AK	AA	AN	AS	AA	AS
R	RA	RR	RK	RA	RN	RS	RA	RS
K	KA	KR	KK	KA	KN	KS	KA	KS
A	AA	AR	AK	AA	AN	AS	AA	AS
N	NA	NR	NK	NA	NN	NS	NA	NS
S	SA	SR	SK	SA	SN	SS	SA	SS
A	AA	AR	AK	AA	AN	AS	AA	AS
S	SA	SR	SK	SA	SN	SS	SA	SS

Based on the logic grid, what is the probability the first note card is labeled with the letter "A" and the second note card is labeled with the letter "R"?

A $\frac{2}{64}$

* **B** $\frac{3}{64}$

C $\frac{6}{64}$

D $\frac{29}{64}$

10 A student records the data below for some regular polygons.

Regular Polygons

Number of Sides	Interior Angle Measurements	Sum of Interior Angle Measurements
3	60°	180°
4	90°	360°
5	108°	540°
6	120°	720°
7	128.57°	900°
8	135°	1080°

Which statement is always true for regular polygons?

A The interior angle measurements are multiples of 3.

B The interior angle measurements are multiples of 5.

C The sum of the interior angle measurements increases by 90° as the number of sides increases by 1.

* **D** The sum of the interior angle measurements increases by 180° as the number of sides increases by 1.

11 A 10-kilometer swimming race was held at the 2008 Olympics. One of the athletes averaged 33.7 seconds for every 50 meters the athlete swam during the race.

How many seconds did it take the athlete to complete the 10-kilometer race?

A 169 seconds

B 297 seconds

* **C** 6740 seconds

D 14,837 seconds

12 What is the least common multiple (LCM) for $9xy^4$ and $12x^2y^2$?

A $18x^2y^2$

* **B** $36x^2y^4$

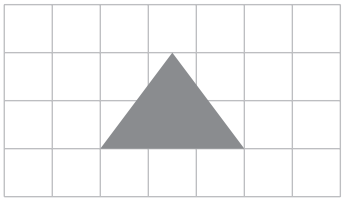
C $36x^3y^6$

D $108x^2y^8$

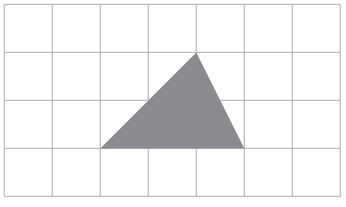
13 A student translated a triangle 2 units to the left. The student noticed that there is a line of symmetry between the triangle and its image.

Which triangle could be the triangle the student translated?

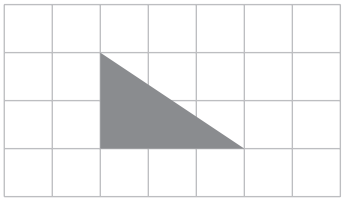
* **A**



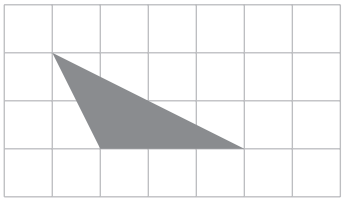
B



C

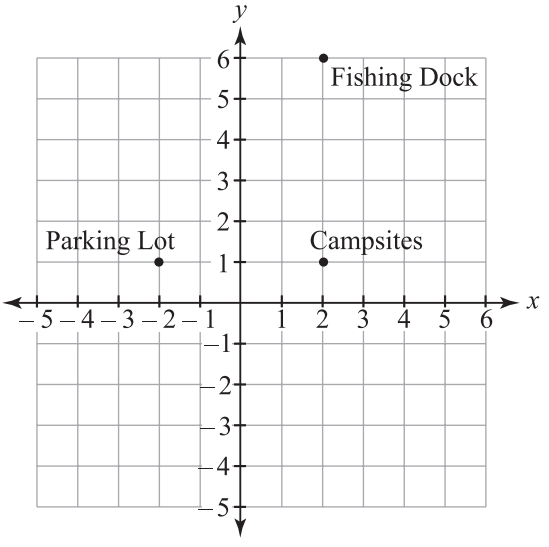


D



14 Carl and Matt were given a map of a campground, as shown below. The parking lot is located at point $(-2, 1)$, the campsites are at point $(2, 1)$, and the fishing dock is at point $(2, 6)$.

Campground Map



Which equation would find the distance from the parking lot to the fishing dock?

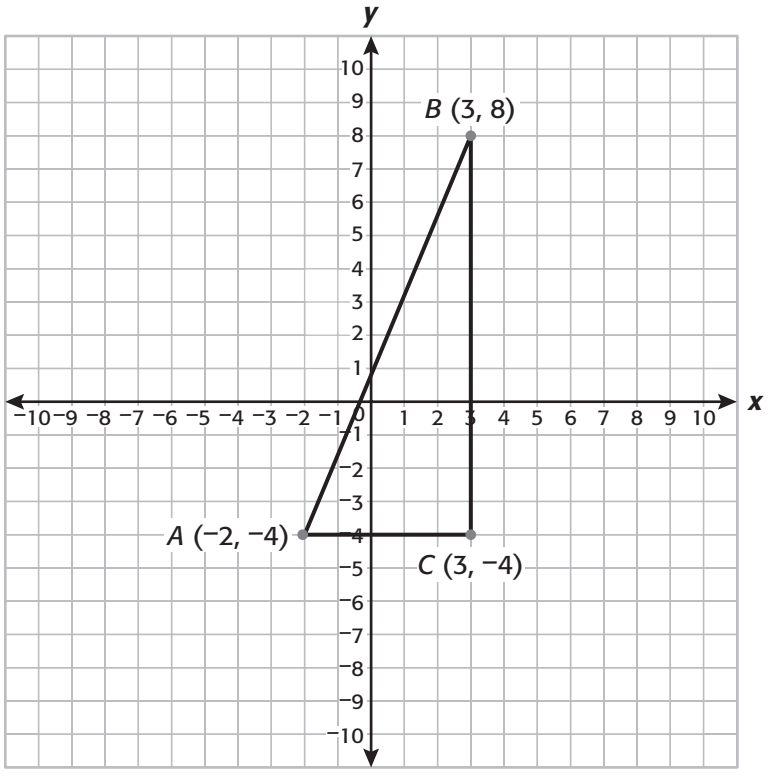
* **A** $5^2 + 4^2 = c^2$

B $5^2 - 4^2 = c^2$

C $6^2 + 2^2 = c^2$

D $6^2 - 2^2 = c^2$

15 Damon graphed triangle *ABC*, shown on the coordinate plane below.



What is the perimeter of triangle *ABC*?

A 13 units

B 17 units

* **C** 30 units

D 39 units

16 There are 3200 contestants in the first round of a national math tournament. At the beginning of each of the next three rounds, there are 25% fewer contestants than were in the previous round.

Which table models the number of contestants remaining in the tournament in each of the first four rounds?

* **A**

Math Tournament

Round	1	2	3	4
Contestants Remaining	3200	2400	1800	1350

B

Math Tournament

Round	1	2	3	4
Contestants Remaining	3200	2933	2667	2400

C

Math Tournament

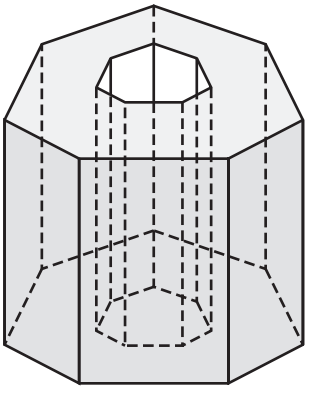
Round	1	2	3	4
Contestants Remaining	3200	2400	1600	800

D

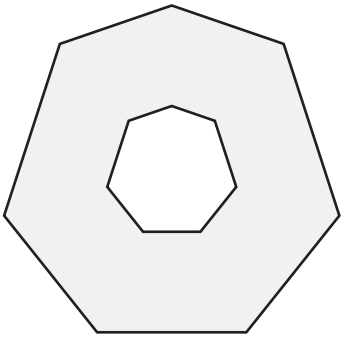
Math Tournament

Round	1	2	3	4
Contestants Remaining	3200	800	200	50

17 The diagram below shows a paperweight that Marsha uses.



Which view of Marsha's paperweight does the following best represent?



A Front
B Right side
C Back
* **D** Bottom

18 The dance committee is making punch for the eighth-grade dance. How many 1-cup servings will be provided from a punch bowl containing 6.5 quarts of punch?

A 12
B 13
C 24
* **D** 26

19 Either Ranjana can pay $19.95 for a magazine subscription that allows her to receive 12 issues of a magazine at home, or she can pay $3.95 per issue for the same magazine at a newsstand.

To the nearest cent, what is the difference in price per issue between Ranjana's two options to buy 12 issues of the magazine?

A $1.33
B $1.66
* **C** $2.29
D $5.05

20 Four students from different schools each surveyed students in his or her school about a school fundraiser.

Which student has the most reliable data?

A Student A, who surveyed 28 students who are representative of a population of 550 students

B Student B, who surveyed 22 students who are representative of a population of 220 students

C Student C, who surveyed 94 students who are representative of a population of 375 students

* **D** Student D, who surveyed 46 students who are representative of a population of 125 students

Mathematics Item A—2011 Grade 8

A A pizza parlor uses the expression $0.75s + 6.75$ to calculate the price, in dollars, for a small pizza that has s toppings.

1. How many toppings are on a small pizza that has a price of $10.50? Show your work and/or explain your answer.

2. The pizza parlor uses the expression $1.35t + 13.65$ to calculate the price for a large pizza that has t toppings. What is the price of a large pizza that has the same number of toppings you found in Part 1? Show your work and/or explain your answer.

BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

Mathematics Item A Scoring Rubric—2011 Grade 8

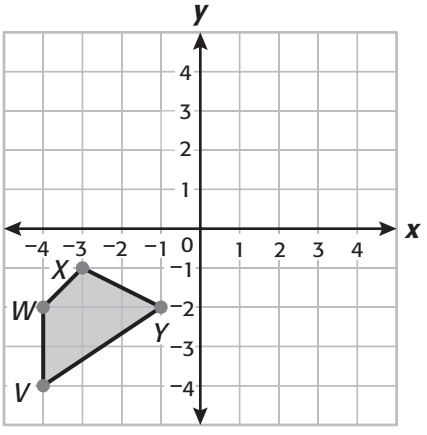
Score	Description
4	The student earns 4 points. The response contains no incorrect work. "$" included in Part 2.
3	The student earns 3 points.
2	The student earns 2 points.
1	The student earns 1 point, or minimal understanding is shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" is assigned for the item.)

Solution and Scoring

<table>
<tr><th>Part</th><th>Points</th></tr>
<tr><td>1</td><td>
2 points possible
2 points: Correct answer: 5
and
Correct and complete procedure.
Give credit for the following or equivalent:
• $0.75s + 6.75 = \$10.50$
$0.75s = 10.5 - 6.75$
$s = \frac{3.75}{.75}$
• $6.75 + .75 = 7.50$ (1 topping)
$7.50 + .75 = 8.25$ (2 toppings)
$8.25 + .75 = 9.00$ (3 toppings)
$9.00 + .75 = 9.75$ (4 toppings)
$9.75 + .75 = 10.50$ (5 toppings)
• A correct and complete table up to at least 5 toppings.
<table>
<tr><td>Nbr of toppings</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td>Price of pizza</td><td>7.50</td><td>8.25</td><td>9.00</td><td>9.75</td><td>10.50</td></tr>
</table>
• Guess & Check showing at least one value that doesn't 'check', and showing that value 5 does.
$0.75 \bullet (3) + 6.75 = 9 \neq 10.5$
$0.75 \bullet (5) + 6.75 = 10.5$
OR
1 point: Correct answer: 5
Procedure is missing, incomplete, or incorrect.
or
Incorrect answer due to one copy, calculation, or rounding error, with correct and complete procedure.
</td></tr>
<tr><td>2</td><td>
2 points possible
2 points: Correct answer: $20.40
Answer may be based on an incorrect answer in Part 1.
and
Correct and complete procedure shown or explained:
Give credit for the following or equivalent:
• $1.35 \bullet (5) + 13.65 = 6.75 + 13.65 = 20.40$
• $13.65 + 1.35 + 1.35 + 1.35 + 1.35 + 1.35 = 20.40$
OR
1 point: Correct answer: 20.40
Procedure missing, incomplete, or incorrect. Answer may be based on an incorrect answer in Part 1.
or
An incorrect answer due to one copy, calculation, or rounding error with correct and complete procedure.
</td></tr>
</table>

Mathematics Item B—2011 Grade 8

B The picture below shows figure *VWXY* drawn on a coordinate plane.



1. On the grid in your Student Answer Document draw a coordinate plane. On the coordinate plane, reflect figure *VWXY* over the *y*-axis and label your new figure $V'W'X'Y'$.

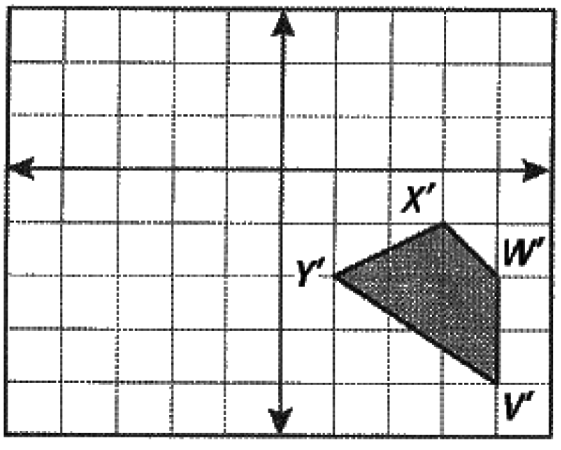
2. On the coordinate plane, rotate the original figure *VWXY* 90° clockwise about the origin and label this new figure *PQRS*.

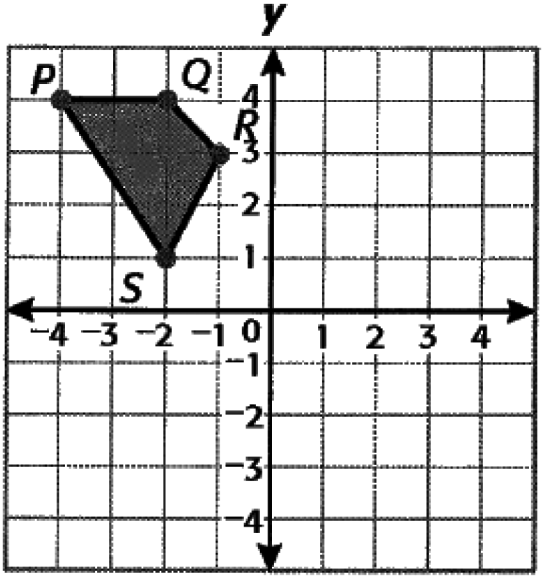
BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

Mathematics Item B Scoring Rubric—2011 Grade 8

Score	Description
4	The student earns 4 points. The response contains no incorrect work.
3	The student earns 3–3½ points.
2	The student earns 2–2½ points.
1	The student earns ½–1½ points, or minimal understanding is shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" is assigned for the item.)

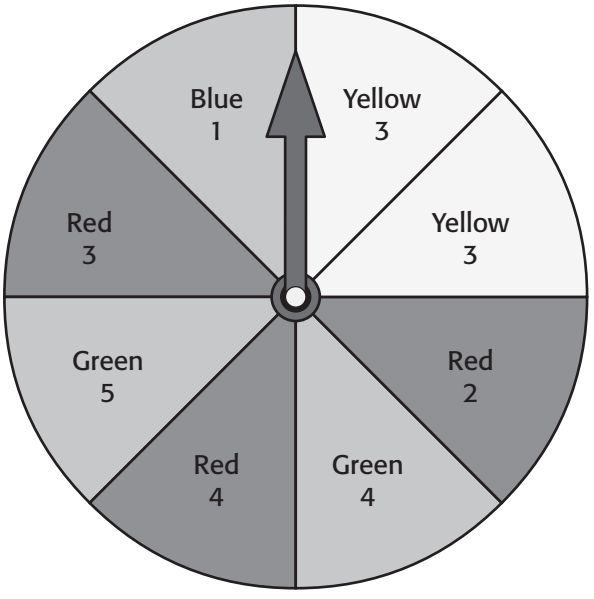
Solution and Scoring

Part	Points
1	**2 points possible** 2 points: **Figure V′W′X′Y′ correctly labeled with coordinates at:** **V′ (4, -4)** **W′ (4, -2)** **X′ (3, -1)** **Y′ (1, -2)** **Grid units may be used without numbering.** **Both axes must have consistent intervals, if numbered.** **Note: If the prime (′) is missing from one label, full credit is given.**  **OR** 1 point: **Correct figure with incorrect or missing labels** **or** **Correctly labeled with one incorrect vertex** **or** **Correct figure with correct labels with inconsistent intervals on one or both axes.**

Part	Points
2	**2 points possible** 2 points: **Figure PQRS correctly labeled with coordinates at:** **P (-4, 4)** **Q (-2, 4)** **R (-1, 3)** **S (-2, 1)**  OR 1 point: **Correct figure with incorrect or missing labels** **or** **Correctly labeled with one incorrect vertex** **or** **90° clockwise rotation of Part 1 with correct labels and vertices** **P (-4, -4)** **Q (-2, -4)** **R (-1, -3)** **S (-2, -1)** **Note: If one or both axes have inconsistent intervals, deduct only once.**

Mathematics Item C—2011 Grade 8

C Each section of the spinner below is the same size.



1. What is the probability that the next time the arrow is spun it will land on a section labeled Red? Show your work or explain how you got your answer.

2. If the arrow is spun 100 times, how many times can it be expected to land on a section labeled 3 or Green? Show your work or explain how you got your answer.

BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

Mathematics Item C Scoring Rubric—2011 Grade 8

Score	Description
4	The student earns 4 points. The response contains no incorrect work.
3	The student earns 3–3½ points.
2	The student earns 2–2½ points.
1	The student earns ½–1½ points, or minimal understanding is shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" is assigned for the item.)

Solution and Scoring

Part	Points
1	**2 points possible** 1 point: **Correct answer:** $\frac{3}{8}$, 3 : 8, .375, 37.5%, or equivalent **OR** ½ point: **Rounded or truncated answer:** .37, .38, 37%, 38%, or equivalent **AND** 1 point: **Correct explanation:** Give credit for the following or equivalent. • There are 8 total sections and 3 are red.
2	**2 points possible** 1 point: **Correct answer:** • 62.5 **or** • 62 **or** • 63 **AND** 1 point: **Correct explanation:** Give credit for the following or equivalent. • There are 8 total sections and 5 of them are either 3 or green. So the probability is ⅝. Then multiply ⅝ times 100. • The probability of 3 or green is ⅝ because there are 3 "3's" and 2 greens and 8 altogether. $\frac{5}{8} = \frac{x}{100}$ $x = \frac{500}{8}$ $x = 62.5$ • $\frac{5}{8} \bullet 100 = 62.5$ **OR** ½ point: **Incomplete explanation:** Give credit for the following or equivalent. • An incomplete but not incorrect explanation that shows the probability is ⅝. "5 of the 8 sections are 3 or green."

Copying this page is a breach of security.

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

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

Tortilla History

by Rosa Gonzales

To tell the story of the tortilla, which is like a thin pancake made of ground corn (pronounced tor-TEE-yah, not tor-TILL-uh), I shall begin with the story of corn.

2 Corn is a New World food. The earliest Indians in what later became New Mexico were nomads who roamed around killing animals for food. But when they learned to grow corn and dry it so they would have food to last them through the winter, their way of life was changed. They could stay in one place and farm.

Later, when the Spanish *conquistadores* came to this land, corn was one of the first foods they found. The Indians taught the Spaniards how to grow corn. The Spaniards called this new food *maíz*, which is "maize" in English. There are many different kinds of corn. It even comes in colors, such as blue.

There were two ways to prepare corn for making tortillas. The first way, women cooked dry white corn in lime water until the hulls were loosened. This was called *nixtamal*. After they washed it to get rid of the lime, they spread the corn on a slab of volcanic rock, called a *metate*, and rolled a smaller rock shaped like a rolling pin, called a *mano*, back and forth over the *nixtamal*, grinding the corn into a paste called *masa*. It took about an hour to grind one gallon of *nixtamal* fine enough to make the *masa* used for making tortillas and tamales.

5 The second way, they ground dried corn into very fine cornmeal called *harina de maíz* that was sifted through a horsehair sieve. My great grandmother (who is 101 years old and lives in Taos) used to grind the corn for her tortillas this way. It is hard, tiring work. Cornmeal mixed with water was used to make tortillas, gorditas (like thick pancakes) and tamales. Today you can buy cornmeal at the supermarket.

6 In the old days the women used to make the tortillas by hand. They would flatten a lump of dough between their palms to make it round and very thin. Now you can make them in a tortilla press. Then you cook them on a *comal,* a flat frying pan without a rim. My father gave my mother a tortilla press for her birthday as a joke, but we buy our tortillas at the supermarket.

Here are six ways to eat corn tortillas:

1. Cut them in strips, fry them, and put them in soup.
2. Cut them in strips, fry them, and cook them with tomatoes and chile to make *chilaquiles*.
3. Fry them and cut them in triangles to make tostadas for dipping in salsa or *chile con queso,* which is melted cheese and chile.
4. Dip them in hot oil, fold them over, and fill them with meat and lettuce and tomatoes and hot sauce to make tacos.
5. Use them to make enchiladas or *huevos rancheros.*
6. Use them as a scoop for eating beans and other things.

Cornmeal is also used to make tamales. Spicy meat is wrapped in *masa*. The meat and dough are then wrapped in cornhusks called *hojas,* which have been soaked all night in a washtub. The tamales are steamed in a big pot. This is what my mother calls labor intensive.

Two things to remember about tamales:

1. Don't ever eat the *hoja.* Once President Gerald Ford tried to eat the cornhusk at a picnic in Texas and was very embarrassed when he found out that part isn't eaten.
2. Tamales means more than one. If you eat only one, it's called a *tamal*, not a "tamally."

In Mexico most people eat corn tortillas, but New Mexicans often prefer flour tortillas made from white flour, water, and shortening, rolled out with a rolling pin and baked on a *comal*. You eat them plain or make a burrito, a little donkey: wrap a flour tortilla around some kind of filling—meat or beans or scrambled eggs and bacon—and pour red or green chile over the top and sprinkle it with cheese. (My mother says there is too much fat in all of this food, but it is delicious.)

My father, who is from the Rio Grande Valley in South Texas, told me a story about a poor man who went to work for a rich man. The poor man bragged to the rich man that he was so wealthy he had a different spoon for every meal and never used the same spoon twice. The "spoon" he was talking about was a tortilla.

1 In paragraph 2, the author suggests that people are no longer nomads when they —

A hunt animals
B move around
* **C** stay in one area
D learn about new foods

2 In paragraph 5, the author mentions her great grandmother in order to —

A show how the author learned to make *harina de maíz*
B suggest reasons why people like to make their own *harina de maíz*
* **C** demonstrate that the author has reliable information about making cornmeal
D explain why people should use a horsehair sieve when making cornmeal

3 Paragraph 6 suggests that someone might buy tortillas from a supermarket because —

A tortillas from the supermarket have been improving in quality

* **B** it would be less work to buy tortillas from the supermarket

C a supermarket is likely to sell tortillas that are made by hand

D it is less expensive to buy tortillas from the supermarket

4 What is the **most** likely reason the author says her father gave her mother a tortilla press "as a joke"?

A A tortilla press is a funny idea for a gift.

* **B** Her family already buys tortillas at the store.

C Most people prefer to make tortillas by hand.

D Only her great grandmother can make tortillas.

5 Which sentence from the passage expresses an opinion?

A "It even comes in colors, such as blue."

B "There were two ways to prepare corn for making tortillas."

* **C** "It is hard, tiring work."

D "Spicy meat is wrapped in *masa*."

6 Why does the author use the example of President Gerald Ford eating tamales at a picnic?

A To suggest that tamales are not a good choice to serve at picnics

B To explain how he made tamales more popular

C To give an example of a famous person who enjoyed tamales

* **D** To show that some people might not know how to eat tamales

7 Who in the passage would the author **most** likely have asked for information about making cornmeal?

* **A** Her great grandmother

B Her grandmother

C Her mother

D Her father

8 The author leaves it to the reader to determine whether —

* **A** one method for grinding corn is better than another

B the process of making cornmeal is easy or difficult

C corn is one of the first foods the Spaniards found

D there might be a good reason to eat a cornhusk wrapper

Reading Item A—2011 Grade 8

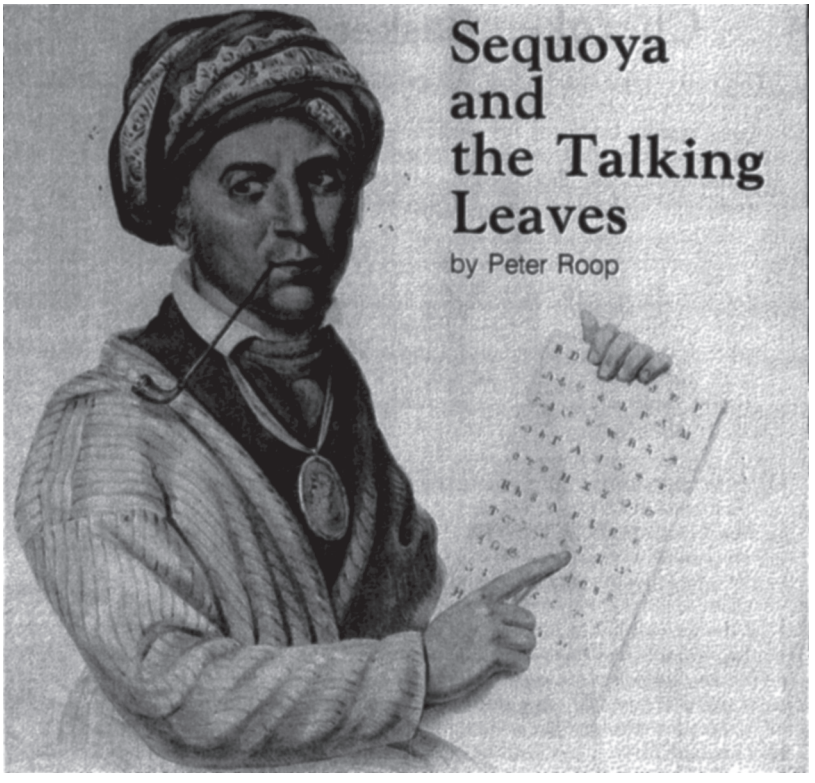
A What are the two different ways to prepare corn for making tortillas?

Give at least two examples from the passage of how tortillas can be used once they are made.

Reading Item A Scoring Rubric—2011 Grade 8

Score	Description
4	The response identifies the two different ways to prepare corn for making tortillas and gives at least two accurate and relevant examples of how tortillas are used.
3	The response identifies the two different ways to prepare corn for making tortillas and gives one accurate and relevant example of how tortillas are used. **OR** The student identifies one way to prepare corn for making tortillas and gives two accurate and relevant examples of how tortillas are used.
2	The response identifies the two different ways to prepare corn for making tortillas. **OR** The response gives two accurate and relevant examples of how tortillas are used. **OR** The response identifies one way to prepare corn for making tortillas and gives one accurate and relevant example of how tortillas are used.
1	The response identifies one way to prepare corn for making tortillas. **OR** The response gives one accurate and relevant example of how tortillas are used. **OR** The response displays minimal understanding of the question.
0	Response is incorrect or irrelevant.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" is assigned for the item.)

Read the passage. Then answer multiple-choice questions 9 through 16 and open-response question B.



1 Sequoya and his daughter Ah-yoka stood before the Cherokee Tribal Council. They knew they had to convince the Council members that Sequoya's sound alphabet was not a trick; they had to persuade the council that with Sequoya's alphabet the Cherokee people could read and write in their own language.

Two warriors escorted Ah-yoka out of the room. The Cherokee chiefs then told Sequoya messages which he wrote down on a piece of paper, using the sound symbols he had created.

When Ah-yoka returned, she took the piece of paper and read the chiefs' exact words to the astonished council. Sequoya had indeed captured their words on paper!

4 Sequoya's success crowned many years of hard, lonely, and frustrating work. Yet with the completion of his alphabet, Sequoya accomplished what no other person in history had done.

He had invented a written language from the spoken words of a people.

Sequoya was born in the hills of Tennessee around 1775, just before the American Revolution. Sequoya's father, Nathaniel Guess, was a white trader and his mother, Wah-teh, was a Cherokee. Shortly after Sequoya was born, his father left the family to help General George Washington fight against the British.

Sometime in his youth one of Sequoya's legs grew lame, either by a disease or by an accident. Because he could not run or hunt as well as his companions, Sequoya turned his energies to drawing and painting pictures of people and animals. Later he used his artistic skills to become one of the Cherokees' finest silversmiths and blacksmiths.

As he grew up, Sequoya became puzzled by the white man's "talking leaves," pieces of paper crowded with black ink marks. He began to wonder how the "talking leaves" carried words that "spoke" to those who received them. Sequoya realized that if the Cherokee people had their own "talking leaves," they could communicate with one another across long distances, and they could record their ancient lore and legends.

8 Sequoya decided to make Cherokee "talking leaves." Using his talents as an artist, he first began drawing pictures for every word in the Cherokee language. Soon he had hundreds of pictures drawn on pieces of bark. Sequoya continued to draw more and more words, often neglecting his farm and family. The pile of bark pictures grew so large that one day his wife—who was angry at him for wasting his time on the alphabet—threw all of the bark pictures into a fire and destroyed them.

Sequoya remained undaunted. Taking his young daughter Ah-yoka with him, Sequoya went to a cabin in the woods to continue his work.

One day Ah-yoka found an old English spelling book. Sequoya knew that the key to understanding the "talking leaves" was in this book. Although Sequoya could not speak or read English, he figured out that 26 characters were repeated over and over to make up the words.

This was the clue that Sequoya needed. He stopped drawing a picture for each word and instead began making symbols for every sound in the Cherokee language. He created 85 symbols, each of which represented a Cherokee syllable.

Then disaster struck again. Other Indians, thinking that Sequoya was making magic in his log cabin, came when he was away and burned his cabin to the ground. His work was ruined once more. Yet Sequoya remembered his syllable symbols, and with Ah-yoka's help, he wrote them on a piece of buckskin.

By this time the Cherokee tribe lived in two areas far apart. Some of the tribe lived west of the Mississippi

River, while others remained in their ancestral homeland in the mountains of the Southeast. Sequoya lived in Arkansas, but he knew that if his alphabet was to be truly successful, he had to convince the Cherokee Tribal Council in the Southeast that his alphabet was valuable for all Cherokee peoples.

14 That was when Sequoya and Ah-yoka passed their crucial test before the Cherokee Tribal Council.

Sequoya's alphabet—or syllabary, as it is more properly called—was easy to learn. Soon Cherokees of all ages were practicing writing the symbols. Sequoya's alphabet appeared on rocks, fence posts, and even on the inside walls of homes.

16 Using the alphabet, the two groups of the Cherokee tribe communicated through letters, sharing news of family and friends. Within a few years the first Indian newspaper, the *Cherokee Phoenix*, was published. The newspaper was bilingual—everything printed in Cherokee was also translated into English. A press began printing Bibles, pamphlets, and other materials using Sequoya's alphabet for the Cherokees.

Sequoya became famous throughout the United States and Europe. His was a remarkable accomplishment. A special medal was made for him which he wore for the rest of his life. Sequoya was also given $500 a year as a reward for his efforts. This was the first literary prize ever given in America.

Sequoya's fascination with language continued all of his life. He died in Mexico while on an arduous journey attempting to discover if all Indian languages came from one language. While Sequoya's gravesite is unknown, he will always be remembered as the man who gave "talking leaves" to the Cherokee Nation.

19 In honor of Sequoya's contributions to his people, the giant sequoia trees were named for him. Sequoia National Park also bears the name of this quiet but determined man.

9 Paragraph 1 suggests that the Cherokee Tribal Council —

* **A** doubted that Sequoya had an alphabet Cherokees could use

B felt Sequoya and Ah-yoka were trying to embarrass them

C believed Sequoya could teach Cherokees English

D hoped Sequoya and Ah-yoka would become leaders

10 Which was the first step Sequoya took in trying to create an alphabet?

A He tried to write down every sound.

B He translated Cherokee into English.

* **C** He created pictures for Cherokee words.

D He taught himself to write using a spelling book.

11 In paragraph 4, the author **most** likely uses the word "crowned" to suggest that —

A Sequoya was Cherokee royalty

B Sequoya's research was unusual

* **C** Sequoya's achievement was important

D Sequoya acted superior to other people

12 When Sequoya moved to the cabin, he demonstrated that he felt —

A apprehensive

* **B** purposeful

C satisfied

D hopeless

13 What does the word crucial mean as it is used in paragraph 14?

* **A** Important
B Frustrating
C Risky
D Successful

14 According to the passage, how was the alphabet first used by the Cherokees?

A They used it to write to each other.
B They printed pamphlets and documents.
C They created their own newspaper.
* **D** They wrote it on places around their homes.

15 Which paragraph **most** clearly shows the effects of Sequoya's work?

A Paragraph 1
B Paragraph 8
* **C** Paragraph 16
D Paragraph 19

16 Which statement is suggested in the passage?

A The Tribal Council thought Sequoya's alphabet would cause trouble.
B Ah-yoka hoped to receive the credit for Sequoya's alphabet.
* **C** The Tribal Council doubted Sequoya's alphabet would work.
D Ah-yoka questioned the value of Sequoya's alphabet.

Reading Item B—2011 Grade 8

B What are two problems that Sequoya had to overcome to write the Cherokee alphabet?

Using details from the passage, explain how Sequoya overcame each problem.

Reading Item B Scoring Rubric—2011 Grade 8

Score	Description
4	The response provides two problems that Sequoya had to overcome to write the Cherokee alphabet and explains how he overcame each problem with accurate and relevant details from the passage.
3	The response provides two problems that Sequoya had to overcome to write the Cherokee alphabet and explains how he overcame one problem with accurate and relevant details from the passage.
2	The response provides two problems that Sequoya had to overcome to write the Cherokee alphabet, but fails to explain how he overcame either problem. **OR** The response provides one problem that Sequoya had to overcome to write the Cherokee alphabet and explains how he overcame the problem with accurate and relevant details from the passage.
1	The response provides one problem that Sequoya had to overcome to write the Cherokee alphabet. **OR** The response displays minimal understanding of the question.
0	Response is incorrect or irrelevant.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" is assigned for the item.)

Acknowledgments

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WRITING PROMPT

A committee of students is creating a wall painting in your school that will feature people from your community. The committee is asking each student to choose one person to include in the painting.

Before you begin to write, think about people from your community. Choose one person to be featured in the painting. Why do you think this person should be included?

Now write an essay about the person from your community you think should be featured in the wall painting. Be sure to name the person and give reasons this person should be included. Give enough detail so that the committee will understand.

WRITER'S CHECKLIST

1. Look at the ideas in your response.
   - _____ Have you focused on one main idea?
   - _____ Have you used enough detail 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 a variety of 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?

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
- Sentence variety
- Tone
- Voice
- Selected information

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.

Nonscoreable and Blank Papers
Nonscoreable papers include student responses that are off-topic, illegible, incoherent, written in a language other than English, or too brief to assess. Nonscoreable papers will receive a score of "0." Blank papers indicate no response was written and will be reported as NA (no attempt), which translates into a score of "0."

The Arkansas Mathematics Curriculum Framework*

7

Strands	Content Standards	Student Learning Expectations
1—Number and Operations (NO)	1. Number Sense: Students shall understand numbers, ways of representing numbers, relationships among numbers and number systems.	2. Convert between *scientific notation* and standard *notation*, including numbers from zero to one. 3. Compare and order *real numbers* including *irrational numbers* and find their approximate location on a number line (Use *technology* when appropriate).
	2. Properties of Number Operations: Students shall understand meanings of operations and how they relate to one another.	2. Understand and apply the *inverse* and *identity* properties. 3. Use *inverse* relationships (addition and subtraction, multiplication and division, squaring and *square roots*) in problem solving situations.
	3. Numerical Operations and Estimation: Students shall compute fluently and make reasonable estimates.	1. Compute, with and without appropriate *technology*, with *rational numbers* in multi-step problems. 2. Solve, with and without appropriate *technology*, multi-step problems using a variety of methods and tools (i.e. objects, mental computation, paper and pencil). 3. Use *estimation* to solve problems involving *rational numbers*; including *ratio, proportion, percent* (increase or decrease) then judge the reasonableness of solutions. 4. Apply factorization to find *LCM* and *GCF* of *algebraic expressions* Ex. $4x^2 y^3$ $6xy^2$ $GCF=2xy^2$ $LCM=12x^2y^3$ 6. Solve, with and without *technology*, real world *percent* problems including *percent* of increase or decrease.
2—Algebra (A)	4. Patterns, Relations, and Functions: Students shall recognize, describe, and develop patterns, relations, and functions.	1. Find the n^{th} term in a *pattern* or a *function* table
	5. Algebraic Representations: Students shall represent and analyze mathematical situations and structures, using algebraic symbols.	1. Solve and graph two-step *equations* and *inequalities* with one *variable* and verify the reasonableness of the result with real world application with and without *technology.* 4. Write and evaluate *algebraic expressions* using *rational numbers.*
	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. 2. Represent, with and without appropriate *technology*, *linear* relationships concretely, using tables, graphs and *equations.* 4. Represent, with and without appropriate *technology*, simple exponential and/or quadratic *functions* using verbal descriptions, tables, graphs and formulas and translate among these representations.
	7. Analysis of Change: Students shall analyze change in various contexts.	1. Use, with and without *technology*, graphs of real life situations to describe the relationships and analyze change including graphs of change (cost per minute) and graphs of accumulation (total cost).

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

The Arkansas Mathematics Curriculum Framework* (continued)

Strands	Content Standards	Student Learning Expectations
3—Geometry (G)	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.*
	9. Transformation of Shapes: Students shall apply transformations and the use of symmetry to analyze mathematical situations.	1. Determine a *transformation's line* of *symmetry* and compare the properties of the figure and its *transformation.* 2. Draw the results of *translations* and *reflections* about the x- and y-axis and *rotations* of objects about the origin.
	10. Coordinate Geometry: Students shall specify locations and describe spatial relationships, using coordinate geometry and other representational systems.	1. Use coordinate geometry to explore the links between geometric and algebraic representations of problems (lengths of segments/distance between points, *slope/perpendicular-parallel lines*).
	11. Visualization and Geometric Models: Students shall use visualization, spatial reasoning, and geometric modeling.	1. Using isometric dot paper interpret and draw different views of buildings.
4—Measurement (M)	12. Physical Attributes: Students shall use attributes 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.	1. Draw and apply measurement skills with *fluency* to appropriate levels of precision. 2. Solve problems involving *volume* and *surface area* of *pyramids*, *cones* and composite figures, with and without appropriate *technology.* 3. Apply proportional reasoning to solve problems involving indirect measurements, scale drawings or rates. 4. Find the distance between two points on a *coordinate plane* using with the *Pythagorean theorem.*
5—Data Analysis and Probability (DAP)	14. Data Representation: Students shall formulate questions that can be addressed with data and collect, organize and display relevant data to answer them.	1. Design and conduct investigations which include • adequate number of trials • unbiased sampling • accurate measurement • record-keeping 2. Explain which types of display are appropriate for various data sets (*scatter plot* for relationship between two variants and *line of best fit*). 3. Interpret or solve real world problems using data from charts, *line plots, stem-and leaf plots, double-bar graphs, line graphs, box-and whisker plots, scatter plots, frequency tables or double line graphs.*
	15. Data Analysis: Students shall select and use appropriate statistical methods to analyze data.	1. Compare and contrast the reliability of data sets with different size populations Ex. 40/80 vs. 40/800 2. Analyze, with and without appropriate *technology*, graphs by comparing measures of *central tendencies* and *measures of spread.* 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.	1. Compute, with and without appropriate *technology*, probabilities of compound events, using organized lists, *tree diagrams* and *logic grid.* 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 and non-released test items in this booklet

Released Items for Mathematics*

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

* Only the predominant Strand, Content Standard, and Student Learning Expectation are listed for the Mathematics items.

Non-Released Items for Mathematics*

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

* Only the predominant Strand, Content Standard, and Student Learning Expectation are listed for the Mathematics items.

The Arkansas English Language Arts Curriculum Framework—Reading Strand*

Content Standards	Student Learning Expectations
9. Comprehension: Students shall apply a variety of strategies to read and comprehend printed material.	2. Evaluate the interrelations of text and world issues/events by applying connection strategies. 5. Generate and define questions related to universal themes to interpret meaning. 6. Monitor reading strategies, including rereading, using resources, and questions, and modify them when understanding breakdowns. 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. 13. Distinguish among stated fact, reasoned judgment, and opinion in text. 15. Identify main ideas and supporting evidence in short stories and novels. 19. Use skimming, scanning, note-taking, outlining, and questioning as study strategies.
10. Variety of Texts: Students shall read, examine, and respond to a wide range of texts for a variety of purposes.	2. Read texts that reflect contributions of different cultural groups. 4. Examine the author's credibility, use of text structure, word choice, and viewpoint to evaluate message. 5. Use skimming, scanning, note taking, outlining, and questioning as study strategies. 12. Read and utilize functional/*practical texts*, including manuals, memos, job applications, and career guides.
11. Vocabulary, Word Study, and Fluency: Students shall acquire and apply skills in vocabulary development and word analysis to be able to read fluently.	1. Automatically decode words to ensure focus on comprehension. 5. Use context to determine meaning of multiple meaning words. 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 and non-released test items in this booklet

Released Items for Reading*

Item	Strand	Content Standard	Student Learning Expectation
1	R	11	10
2	R	10	4
3	R	9	7
4	R	11	10
5	R	9	13
6	R	9	2
7	R	10	2
8	R	9	13
A	R	10	12
9	R	9	13
10	R	10	5
11	R	10	4
12	R	9	8
13	R	11	5
14	R	10	5
15	R	9	19
16	R	10	4
B	R	10	2

* Only the predominant Strand, Content Standard, and Student Learning Expectation are listed for the English Language Arts items.

Non-Released Items for Reading*

Strand	Content Standard	Student Learning Expectation
R	9	9
R	9	15
R	11	1
R	9	10
R	9	7
R	9	6
R	9	13
R	9	5
R	9	8

* Only the predominant Strand, Content Standard, and Student Learning Expectation are listed for the English Language Arts items.

The Arkansas English Language Arts Curriculum Framework—Writing Strand*

Content Standards	Student Learning Expectations
4. Process: Students shall employ a wide range of strategies as they write, using the writing process appropriately.	7. Revise content for • Central Idea • Organization • Unity • Elaboration • Clarity 10. Edit individually or in groups for appropriate grade-level conventions, within the following features: • *Sentence formation* • Completeness • Absence of fused sentences • Expansion through standard coordination and modifiers • *Embedding* through standard subordination and modifiers • Standard word order • *Usage* • Standard inflections • Agreement • Word meaning • Conventions • *Mechanics* • Capitalization • Punctuation • Formatting • Spelling
6. Conventions: Students shall apply knowledge of Standard English conventions in written work.	6. Apply conventions of grammar with emphasis on the following: Subject-verb agreement Parts of speech Pronoun and antecedent agreement Parts of a sentence and *sentence patterns* S-V S-V-DO S-V-IO-DO S-LV-PN S-LV-PA Conjugation in regular, progressive, and emphatic verb forms Verbals 7. Spell words correctly in all writing. 8. Apply conventional rules of capitalization in writing. 9. Apply conventional rules of punctuation in writing.

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

Non-Released Items for Writing*

Strand	Content Standard	Student Learning Expectation
W	6	7
W	6	8
W	6	9
W	6	9
W	6	6
W	6	6
W	4	7
W	4	10

* Only the predominant Strand, Content Standard, and Student Learning Expectation are listed for the Writing items.

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