AK STAR

ALASKA SYSTEM OF ACADEMIC READINESS

Educator Guide to Student Readiness

ALASKA DEPARTMENT OF EDUCATION & EARLY DEVELOPMENT

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Purpose of this Guide

This Educator Guide to Student Preparation provides an overview of the resources created to help prepare students for the Alaska System of Academic Readiness or AK STAR. This guide is intended to help educators familiarize students with the format of the assessments using the Student Tutorial and Practice Test resources.

The Student Tutorial and Practice Tests are available to students, educators, families, and community members. DEED encourages everyone to utilize these tools to become familiar with the assessments.

Descriptions of the Student Tutorials and Practice Tests are presented in this guide. The items presented in this guide are for illustrative purposes and allow students to become comfortable with the assessment platform and presentation.

Connection to the Standards

The AK STAR assessments measure the skills and concepts outlined in the Alaska English Language Arts and Mathematics Standards. These K-12 standards can be found on the Alaska Department of Education & Early Development Standards webpage.

Although it is important to familiarize students with what they will experience on the AK STAR summative assessment, ensuring that students receive instruction in the ELA and math standards is key. These standards establish a strong foundation of knowledge and skills all students need for success after graduation. A solid curriculum and instruction based on evidence and best practices will provide a strong content background for students. The AK STAR summative assessments measure a student's understanding of the standards.

AK STAR Assessment Preparation

The AK STAR student readiness resources are comprised of two components to support students learning to navigate within the test environment, utilize the tools available, and become familiar with the format of the assessment: Student Tutorial and Practice Tests.

Student Tutorial

The Student Tutorial is a narrated video that introduces the test platform. The tutorial uses narration and visual descriptions to explain the testing tools and navigation though the test engine.

How to Access the Student Tutorial

Quick Guide: Accessing Student Tutorial is located in Appendix A of this guide and on the AK STAR webpage. This one-page document provides step-by-step instructions and screenshots to guide users to the tutorial.

Practice Tests

The purpose of the AK STAR Practice Tests is to familiarize students with the engine, the NWEA State Solutions Secure Browser, and to give them an opportunity to practice the types of questions that will be on the AK STAR summative assessment.

The Practice Tests cover only a small amount of the content in the Alaska English Language Arts and Mathematics Standards and should not be used to inform instruction. An answer key for each practice test is available in Appendix C of this guide. Districts and educators are encouraged to have students login to the practice tests via the NWEA State Solutions Secure Browser.

Students need multiple opportunities to access the practice tests so that they are familiar with using the tools and functions that are part of the AK STAR Summative Assessment. Students should practice on the same types of devices (e.g., computers, tablets) that they will use during the spring assessments. Students should also take the assessment on the type of device that they are most familiar with using in the classroom.

Guidance for Teachers

Here are some examples of the types of features in the practice tests that teachers should review with students:

- Show how to navigate using the question numbers at the bottom of the page and the navigation buttons (Next and Back).
- Model when and why to use the Mark for Review feature (e.g., if students find themselves stuck on a problem, they can flag it and then go back to it later).
- Model how to use the Eliminator tool to show how to cross-off answer options for various item types.
- Model how to use the final review page to make sure all items have been completed and how students can return to a specific item by clicking on the number.
    - Show students how to access the calculators when available (specific parts in grades 6-9).
    - Show students how to access the formula table in grades 5-9.
    - Show students how to use the scroll bar to see the entire passage (for ELA) and explain to students how they can look back at the passage on the left side of the screen when answering the questions on the right side of the screen.
    - Practice moving the guideline on the screen as the student reads a passage.
    - Practice using the scroll bar to see the entire item for items that extend beyond the screen.

The following lists show some of the tools and navigation controls available on the AK STAR Summative Assessment.

Tools

- Help (?)
- Eliminator
- Guideline
- Highlighter
- Sticky Note
- Magnify
- Drawing
- Protractor (grades 4-5 only)
- Ruler
- Graph Paper

Students must be able to read and use these buttons for navigation

- Next
- Back
- Mark for Review
- Clear
- Pause
- Return to test
- End test
- Submit and End Test

The following list shows some technology skills that students may need to use for the AK STAR Summative Assessment.

Keyboarding skills

- Type single word or numbered responses
- Type paragraph response.

Mouse or touch screen skills

- Click or touch to select an answer or multiple answers.
- Click or touch to highlight a word or sentence.
- Select an item from a drop-down menu.
- Drag and drop a word, number, phrase, or image to sort, order, label, match, or complete model.
- Move the line in a bar area to construct a bar graph.

How to Access the Practice Tests

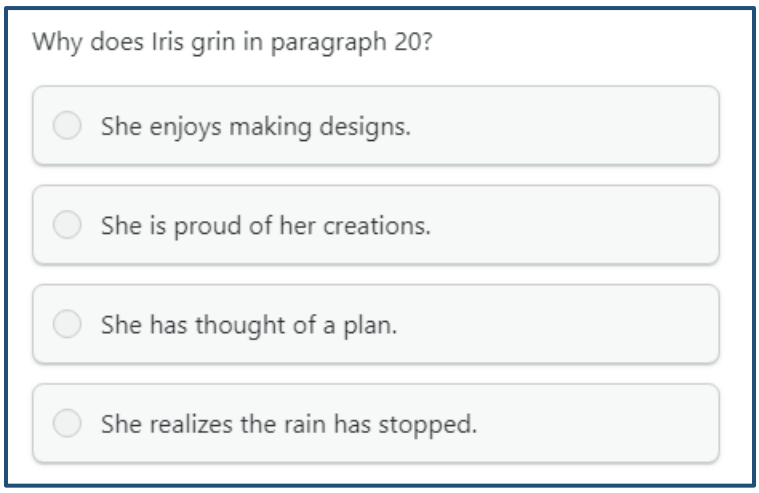
Quick Guide: Accessing Student Practice Tests is located in Appendix B of this guide and on the AK STAR Student Readiness webpage. This one-page document provides step-by-step instructions and screenshots to guide users to the practice tests.

English Language Arts Item Types

Specific item types students may see are listed below and are taken from the AK STAR ELA Practice Tests.

Multiple-Choice Single-Select

This type of question lists four choices and asks students to select the correct answer. It is worth 1 point.



Multiple-Choice Multiple-Select

This type of question lists five or more choices and has two or more correct answers. (Students will be told how many choices to select.) It is worth 1 point. Students must select all of the correct choices and none of the incorrect ones for their answers to be scored as correct.

Table

This type of question asks students to sort information into groups. For each row, students select the column that correctly describes that row. It is worth 2 points, but students can earn partial credit of 1 point if they choose all but one of the correct answers.

How do the things Iris says show her character traits? Match each trait with the quote from the passage that **best** supports it. Each line only has one answer.

	Clever	Confident	Eager
"'May I run over to Rodney's booth?'" (paragraph 11)	○	○	○
"'Not rich enough. Do you think we can make a trade?'" (paragraph 23)	○	○	○
"'My tags have pizzazz. . . . Customers love them.'" (paragraph 27)	○	○	○

Drop-Down

This type of question asks students to select answers from drop-down lists. If there is only one drop-down list, the question is worth 1 point. If there are two drop-down lists, the question is worth 2 points, but students can earn partial credit of 1 point if they select the correct choice from only one of the drop-down lists.

Select from the lists of choices to complete the sentences.

In the first paragraph, the author asks the question, "Who wants a bedtime story?" to

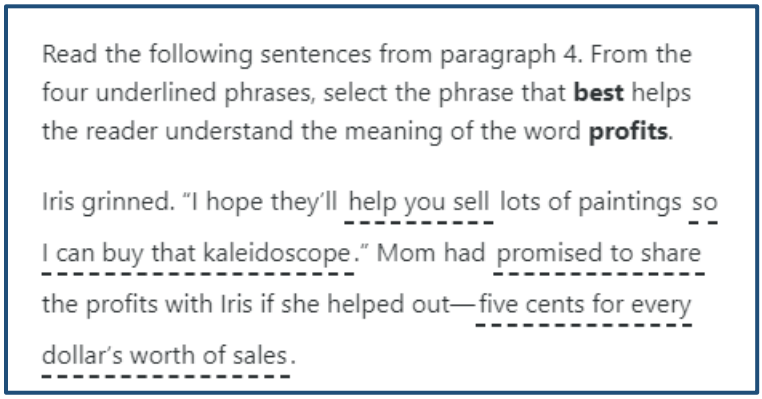
[choose] ▼

The author offers a possible answer to the question to introduce the

[choose] ▼

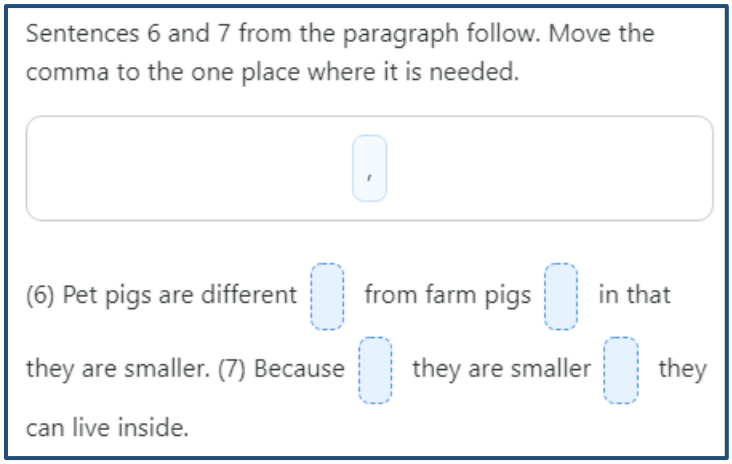
Select in Passage

This type of question asks students to select answers from a short section of the passage or another text, such as a dictionary entry. In the given text, certain words, phrases, or sentences are underlined. The students' job is to select the underlined choice or choices that provide the best answer. (They will be told how many choices to select.) This type of question is worth 1 point.



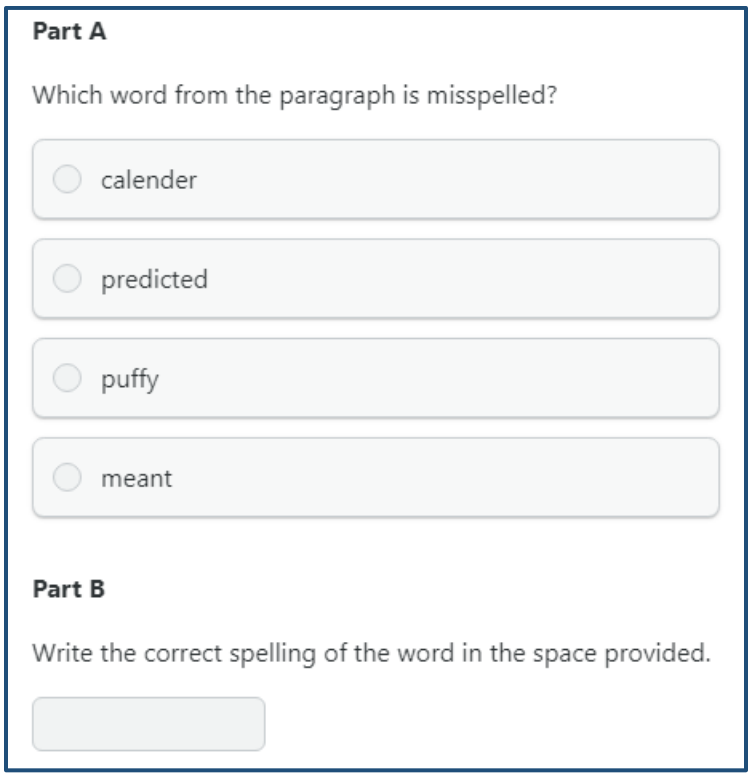
Drag and Drop

This type of question asks students to move one or more choices into the correct box. If there is only one box to fill or if the number of choices equals the number of boxes to fill, the question is worth 1 point. If there are two or more boxes to fill and there are more choices than boxes, the question is worth 2 points. For the 2-point questions, students can earn partial credit of 1 point if they fill all but one box correctly.



Text Entry

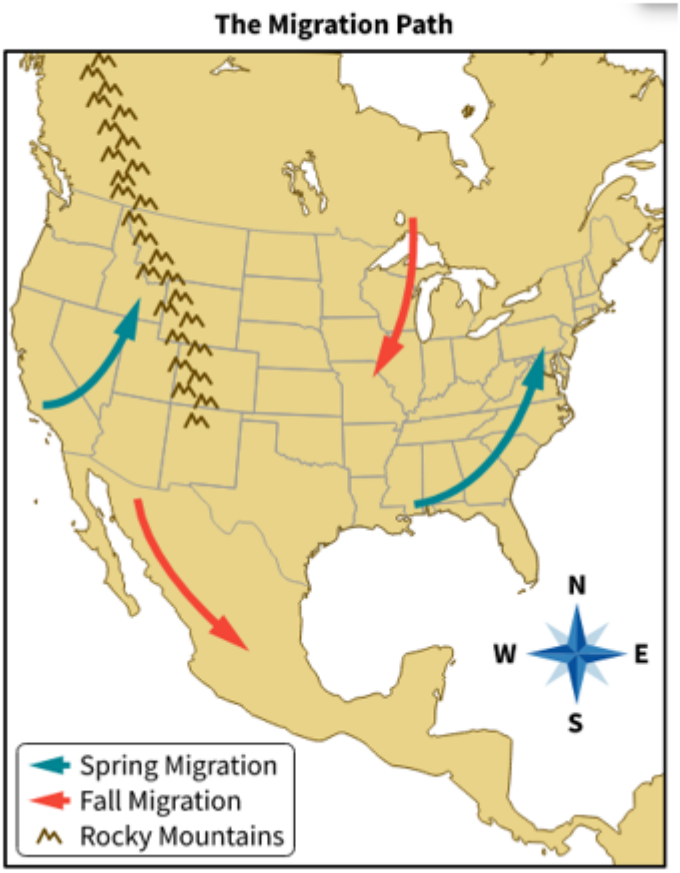
This type of question asks students to write a short written response—usually of just one word—in a box. It is usually used to test knowledge of spelling. It is worth 1 point. In the example that follows, part B is a text-entry question.



Select in Graphic

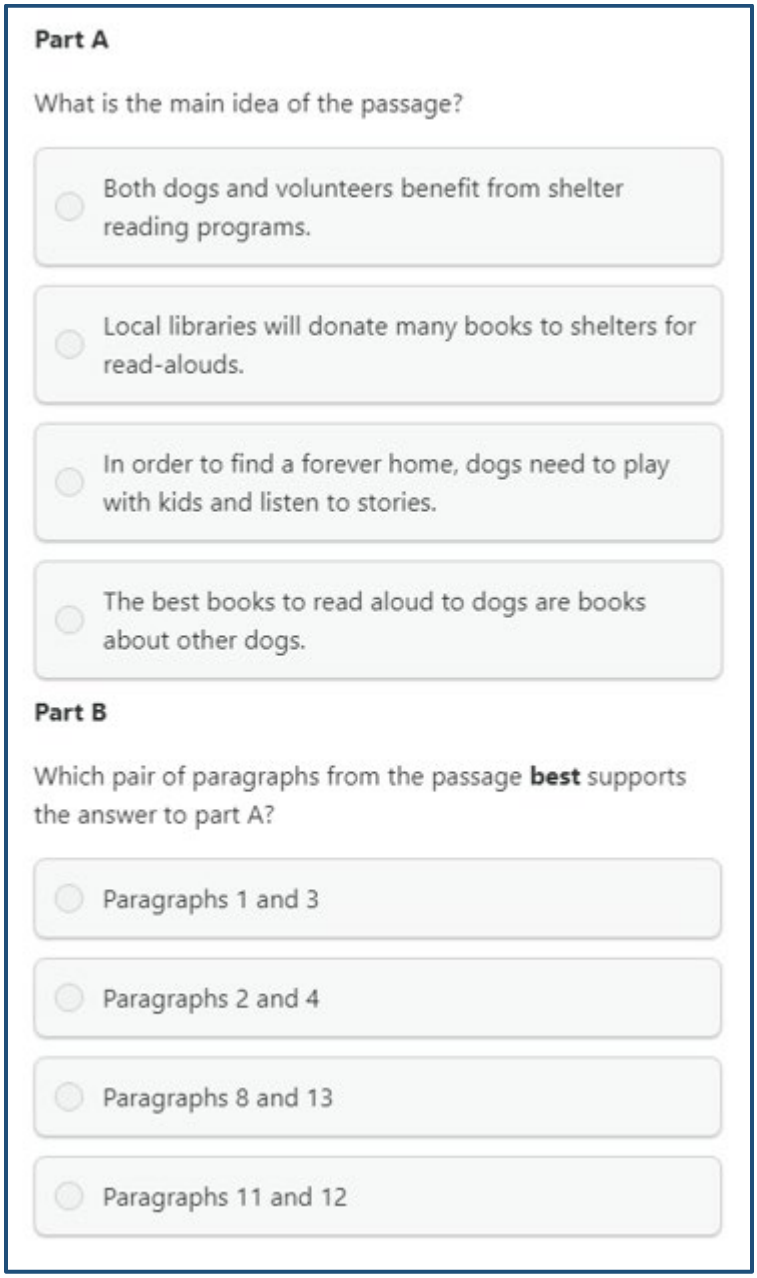
This type of question shows a graphic, such as an illustration from the passage, with certain selectable sections. The students' job is to select the correct section or sections. (They will be told how many sections to select.) This type of question is worth 1 point.

Read paragraphs 7 through 8. Select the **two** arrows that represent the migration path of fourth-generation monarch butterflies.



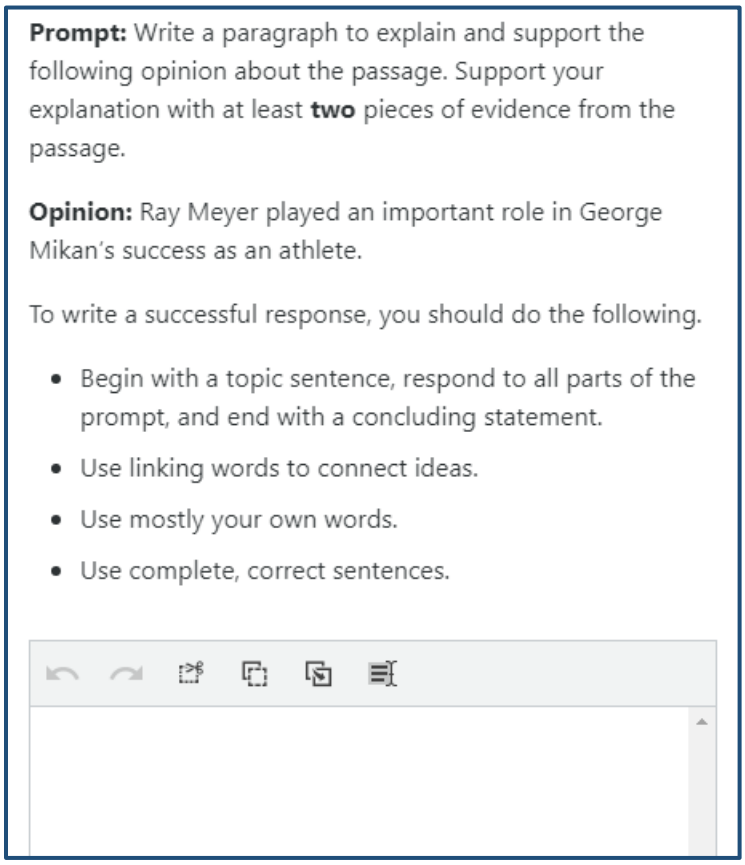
Multipart

This type of question combines two other kinds of questions. Usually, the first part asks about a passage, and the second part asks for evidence to support the answer in the first part. This type of question is worth 2 points, but students can earn partial credit of 1 point if they answer the first part correctly and the second part incorrectly. Students earn no credit if they answer the first part incorrectly, even if they answer the second part correctly.



Written Response

This type of question asks students to write a short response of about a paragraph based on a passage or two passages. The response is worth 3 points.

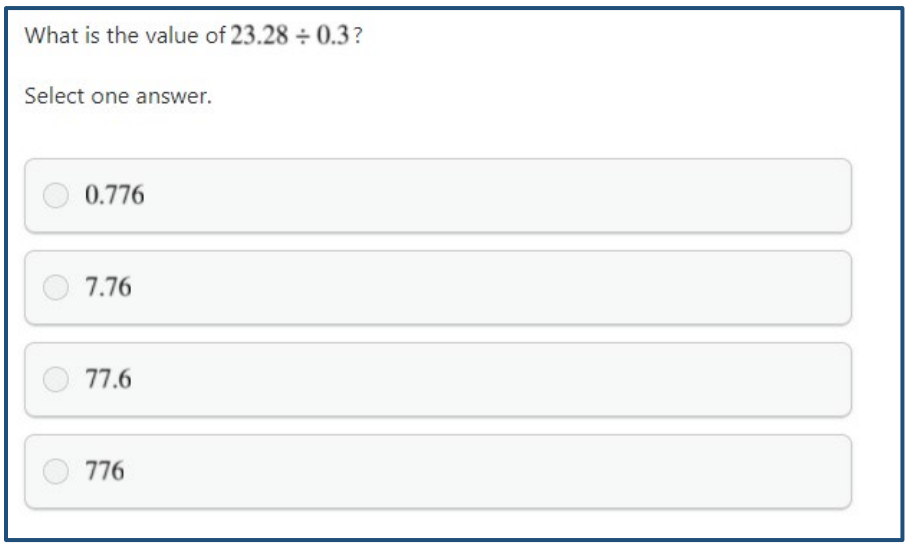


Mathematics Item Types

Specific item types students may see are listed below and are taken from the AK STAR Mathematics Practice Tests. All math questions are worth 1 point, except for the multipart questions and written responses.

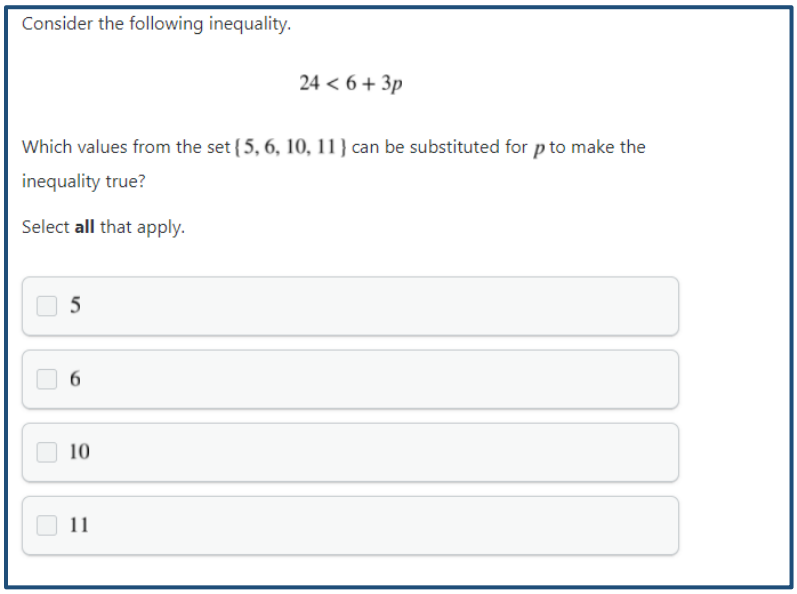
Multiple-Choice Single-Select

This type of question lists four choices and asks the student to select the correct answer.



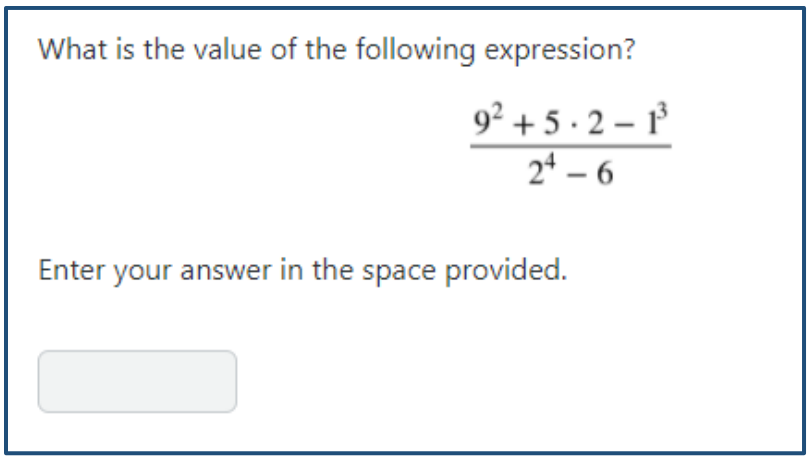
Multiple-Choice Multiple-Select

This type of question lists three or more choices and can have any number of correct answers. Sometimes students will be told how many choices to select, and sometimes they will not be told. Students must select all the correct choices and none of the incorrect choices for their answer to be scored as correct.



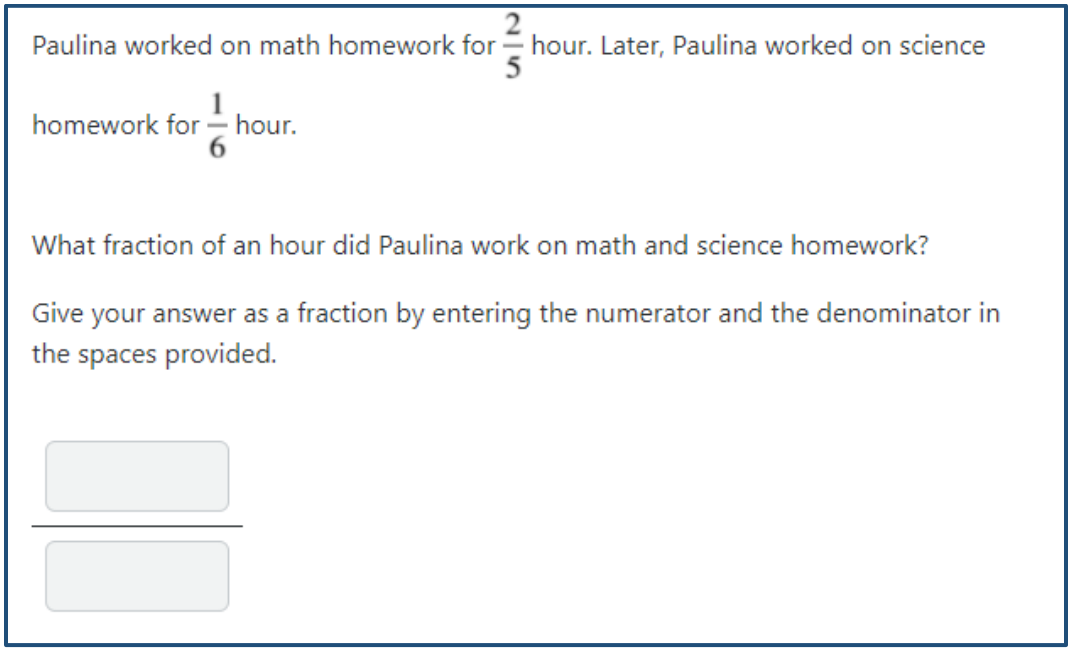
Numeric Entry

This type of question asks students to enter a number or numbers. Students can use the digits 0 through 9 in their answer. In grades 4 and up, students can use a decimal point, and in grades 6 and up, students can also use a negative sign.



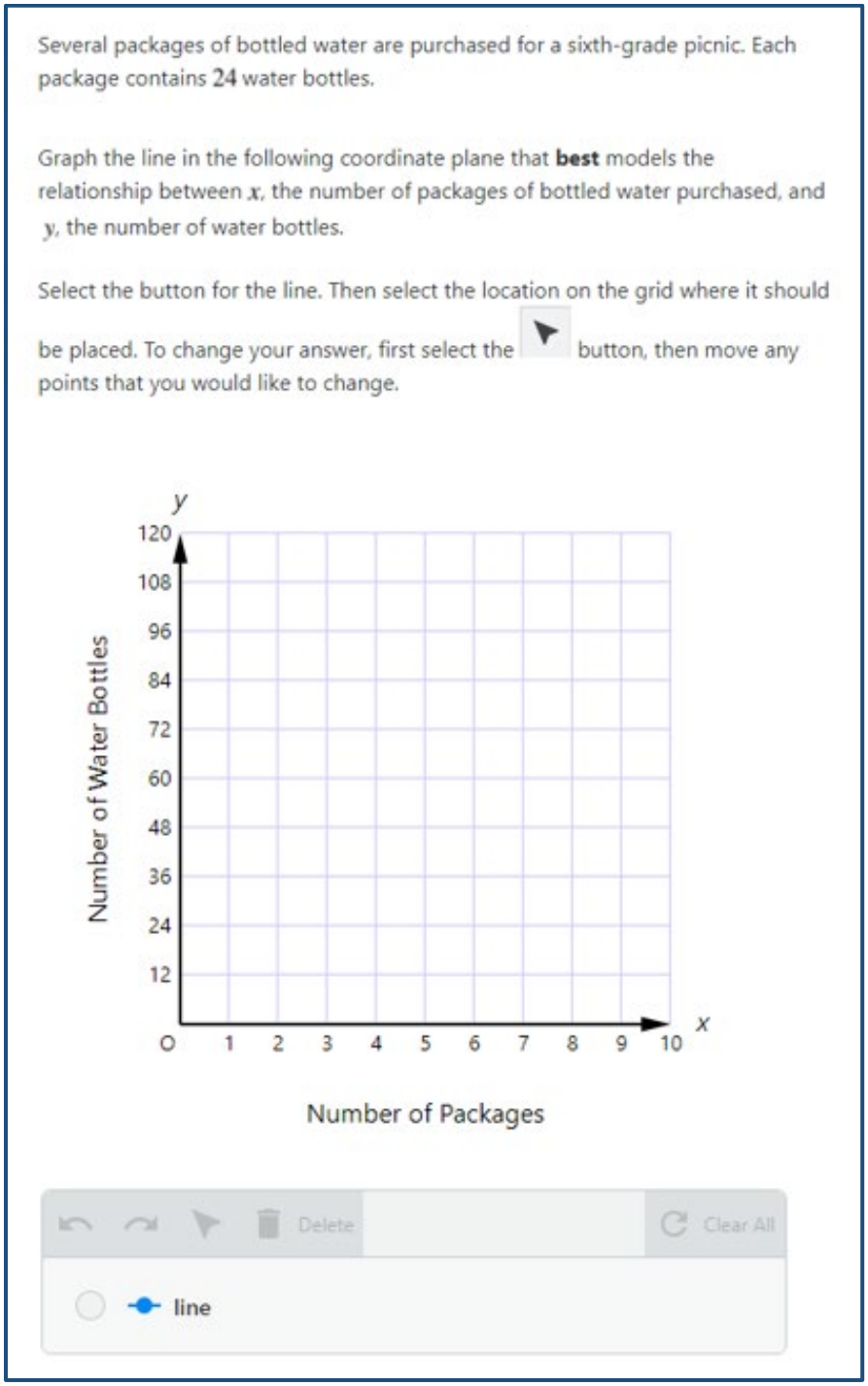
Fraction Entry

This type of question asks students to give their answer as a fraction by entering the numerator and denominator. Students can use digits 0 through 9 in their answer, and students in grades 6 and up can also use a negative sign. They cannot enter a decimal point. Unless an exact match is required, equivalent responses are scored as correct. For example, if the answer is $\frac{1}{2}$, then $\frac{4}{8}$ is scored as correct.



Graphing

This type of question asks students to graph one or more points or lines on a grid. To graph each object, students must first select the button for that object. Then they select a place on the grid where they want the object to appear. To graph a line, students place two points on the grid that the line should pass through. Students can move objects after they are placed by first selecting the Chooser button ( ), and then selecting and dragging points.



Table

This type of question asks students to select cells in a table. For each row, students select the column or columns that are correct. Some questions may restrict them to one selection for each row or column, and some may allow them to select more than one column per row.

Determine whether each expression in the following table is equivalent to $6\frac{3}{4} \div \frac{9}{10}$.

Select one cell per row.

	Equivalent to $6\frac{3}{4} \div \frac{9}{10}$	**Not Equivalent to $6\frac{3}{4} \div \frac{9}{10}$**
$6\frac{3}{4} \div 9 \div 10$	○	○
$\frac{24+3}{4} \cdot \frac{10}{9}$	○	○

Drop-Down

This type of question asks students to select answers from drop-down lists.

Describe how the numbers $-7\frac{1}{2}$ and -7 would be positioned relative to each other on a horizontal number line.

Select from the lists of choices to complete the statement.

The number $-7\frac{1}{2}$ would be to the [choose] of -7 on a horizontal number line because [choose].

Drag and Drop

This type of question asks students to move one or more choices into the correct space or spaces.

Melvin and Roberto played football on two different teams last season.

- Melvin's team won w games.
- Roberto's team won 3 fewer games than Melvin's team.

Create an expression that can be used to represent the number of games Roberto's team won last season.

Move a number, variable, or symbol into each box.

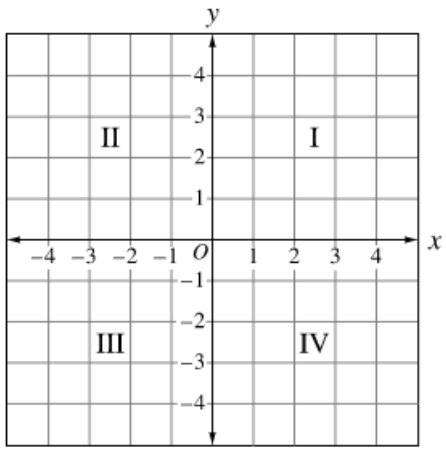
3 w $-$ $+$ $\cdot$ $\div$

Zone

This type of question asks students to select one or more sections of an image presented to them. When selected, the portion will be highlighted.

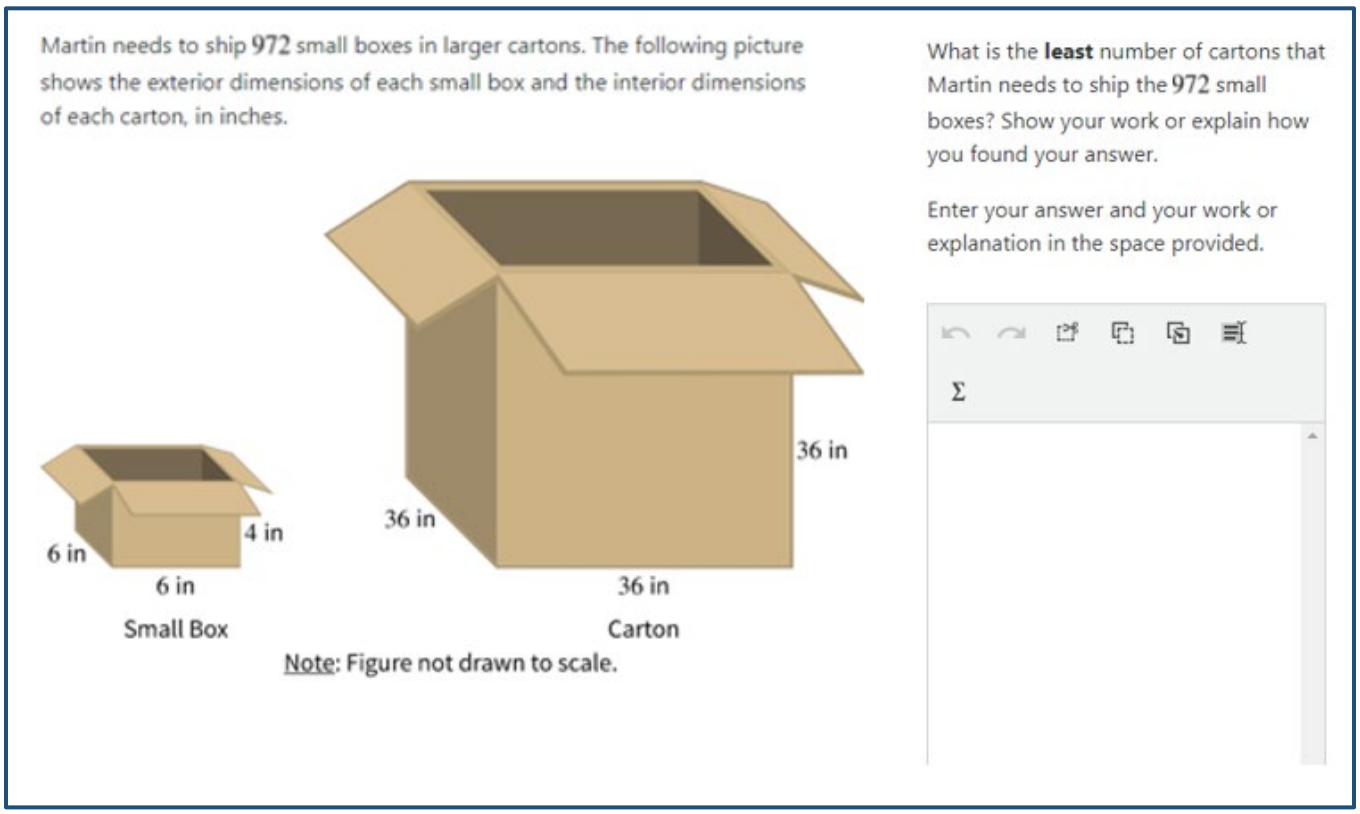
The following figure shows a coordinate plane with the quadrants labeled. In which quadrant does the point with coordinates $\left(-3\frac{1}{4}, 2\frac{1}{2}\right)$ lie?

Select the correct quadrant.



Written Response

This type of question asks students to write a response that includes a combination of words and math expressions or equations. Although not required, students can use the equation editor buttons to add mathematical symbols to their answer. Words can be typed from their regular keyboard. This type of question is worth three points for grades 3–5 and four points for grades 6 and up; it is human scored.

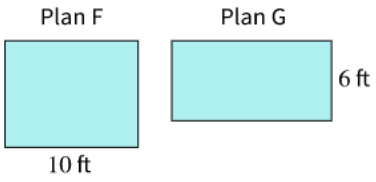


Multipart

This type of question has two or three parts. Each part has one question that can be any of the types described in this document. All parts are based on the information that is presented on the left side of the screen. Each part is worth one point unless one of the parts is a written-response question.

Hubert will add a room with a rectangular floor to a house. He will use one of the following floor plans. He will need enough carpet to cover the floor and enough border to line the edges of the ceiling.

- The dimensions of each floor plan are the same as the dimensions of the ceiling for that plan.
- The cost of the carpet per square foot will be the same for both plans.
- The cost of the border per foot will be the same for both plans.



Part A

If Hubert chooses Plan F and needs 80 square feet of carpet for the floor, what is the total number of feet of border he will need for the edges of the ceiling?

Enter your answer in the space provided.

feet

Part B

If Hubert chooses Plan G and needs 36 feet of border for the edges of the ceiling, what is the total number of square feet of carpet he will need for the floor?

Enter your answer in the space provided.

square feet

Appendix A: Accessing Student Tutorials

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Quick Guide

The Student Tutorial is a web-based video that introduces the AK STAR testing system. The tutorial will walk a student through using the online practice tests, providing basic testing instructions, where to access the provided support tools and testing tips. The tutorial is accessible to students, educators, families, and community and easily viewable on many web browsers. A username and password are not required to access the tutorial.

1. Use the link posted to the AK STAR Student Readiness webpage (education.alaska.gov/assessments/akstar/student-readiness) to view the Student Tutorial. After the link is selected, the video will begin to play.
2. OR use this link to take you directly to the video: https://vimeo.com/672021973/4d3ec642c2

Appendix B: Accessing Practice Tests

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Quick Guide

The Practice Tests are for the computer-based assessment designed to provide students with a hands-on opportunity to experience the test environment. Students can navigate through a "test", practice using test-taking tools, and try out different item types.

School districts should provide students with the opportunity to use the practice tests. Students should be familiar with navigating the test environment prior to testing so they can focus on the content of the test and confidently demonstrate their knowledge of the Alaska standards.

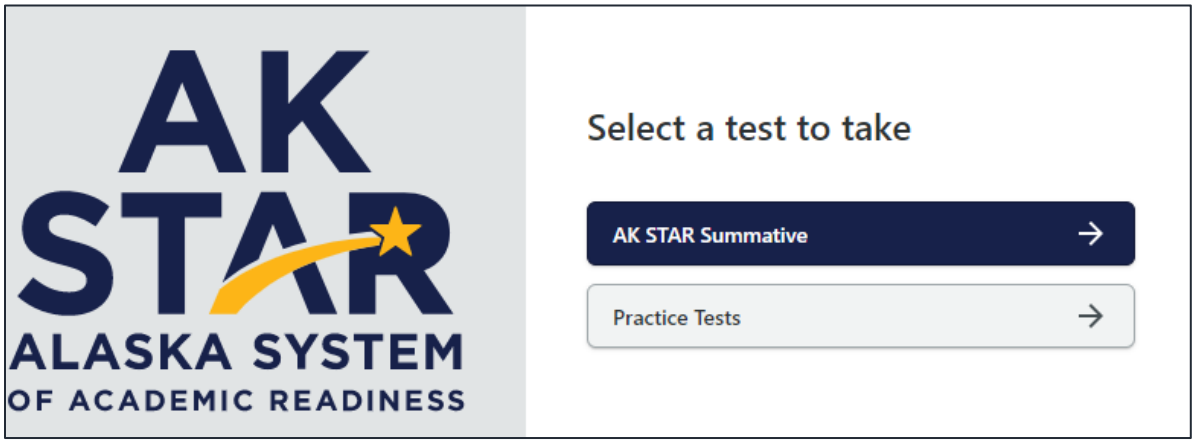
The practice tests are accessible to students, educators, parents, and community. Families are encouraged to use the practice tests and see what kinds of questions their student will be answering. Test questions are not scored, and answers are not saved.

All of the resources mentioned in the steps below are also available on the AK STAR Student Readiness webpage (education.alaska.gov/assessments/akstar/student-readiness).

- Access the Practice Tests via the NWEA State Solutions Secure Browser. Districts should download the NWEA State Solutions Secure browser to provide the best testing experience for students. Directions for this download can be found in the AK STAR System and Technology Guide. This will also help ensure student devices are prepared for testing during the operational administration.
- Access the Practice Tests via internet browser. The practice tests are also available outside the secure browser by using this provided link. AK STAR Practice Tests

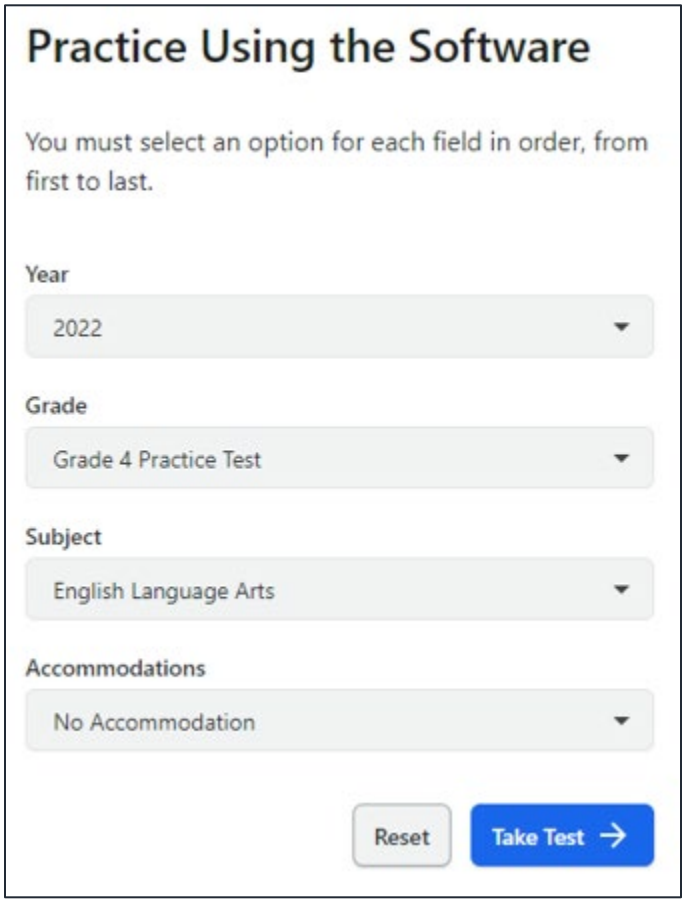
Once on the practice test page, follow the steps below to access the appropriate practice test.

1. Select "Practice Tests" from the two options.



2. A menu of test options will be presented. Select the appropriate option from each drop-down button.

3. Once you have selected all the appropriate options, select “Take Test” to begin the practice test.



4. If your student uses American Sign Language (ASL) or Text to Speech functionality, you can practice these item types by selecting “Grade 3-9 Accommodated Items” in the “Grade” drop down.
5. Under the “Accommodations” drop down Select ASL or Text to Speech to view those practice items.

Appendix C: Answer Keys for AK STAR

The following pages include answer keys and item type for each item included in the AK STAR Practice Tests. These answer keys are also available separately on the AK STAR Student Readiness webpage.

Written responses in the following answer keys may contain spelling or grammatical errors. These errors are intentional and meant to be reflective of a student response.

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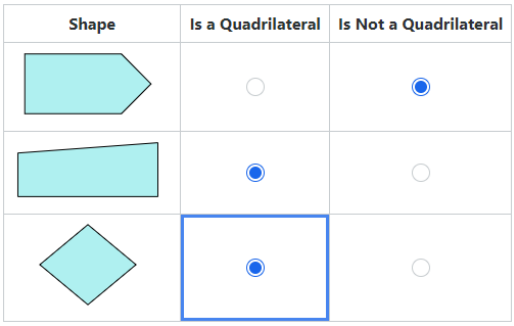
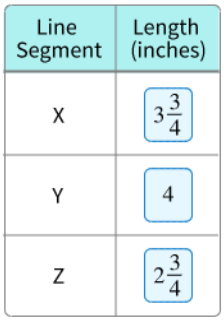
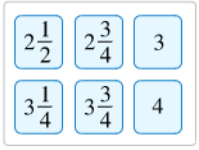
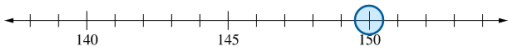
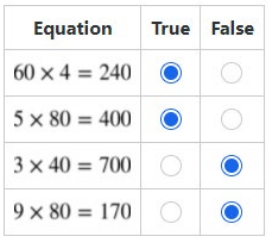
Mathematic Grade 3 Practice Test Answer Key

Item Number	Correct Answer	Item Type
1	◉ $63 \div 7$	Multiple Choice Single-Select
2	$\frac{2}{3}$	Fraction Entry
3		Table
4	For how many days has Mr. Jonas been painting? Enter your answer in the space provided. 6 days	Numeric Entry
5	 	Drag and Drop

Item Number		Item Type
6	Johnny sold 5 bags of nuts in the first hour. How many **pounds** of nuts did Johnny sell in the first hour? Enter your answer in the space provided. 10 pounds of nuts	Numeric Entry
7	◉ 18 pounds	Multiple Choice Single-Select
8	What is the value of the following expression? $308 + 97$ Enter your answer in the space provided. 405	Numeric Entry
9	◉ $\frac{2}{3} > \frac{2}{4}$	Multiple Choice Single-Select
10	☐ Four right angles ☑ Exactly four sides ☐ Angles of different sizes ☑ Pairs of opposite sides with the same length ☐ Pairs of connected sides with the same length	Multiple Choice Multiple-Select
11	◉ ◇ × ★ = 35	Multiple Choice Single-Select
12	Select a place on the number line to plot the point. 	Zone
13	◉ 3	Multiple Choice Single-Select
14	How many pencils were in each box? Enter your answer in the space provided. 10 pencils	Numeric Entry

Item Number		Item Type
15	What is the total area of the shape, in square feet? Enter your answer in the space provided. 108 square feet	Numeric Entry
16	◉ $6 \times (4 + 3)$	Multiple Choice Single-Select
17	At what time did Carter go outside to play? Enter your answer in the two spaces provided. 9 : 21	Multiple Numeric Entry
18	◉ 	Multiple Choice Single-Select
19	Which **two** pairs of measurements could be the length and width of the window? Select the **two** correct answers. ☐ The length is 4 feet, and the width is 6 feet. ☑ The length is 7 feet, and the width is 5 feet. ☐ The length is 8 feet, and the width is 3 feet. ☑ The length is 9 feet, and the width is 3 feet. ☐ The length is 12 feet, and the width is 12 feet. ☐ The length is 14 feet, and the width is 10 feet.	Multiple Choice Multiple-Select
20	The result will always be an [even] number, and the digit in the ones place will always be [0].	Drop-Down
21	$8 \times 6 = 48$ $7 = 21 \div 3$ $45 \div 9 = 5$	Multiple Numeric Entry
22	◉ The fraction $\frac{2}{3}$ can be represented by 1 whole that is partitioned into 3 equal parts, of which 2 parts are shaded.	Multiple Choice Single-Select

Item Number	Correct Answer	Item Type
23	$1 = \frac{\square}{4}$ (4) $2 = \frac{\square}{1}$ (2)	Multiple Numeric Entry
24	The mass on the scale will increase from 140 grams to 390 grams.	Drop-Down
25	◉ 14 square inches	Multiple Choice Single-Select
26		Table
27	◉ $4 \times 7 = 28$	Multiple Choice Single-Select
28	Move a number or symbol into each space. 2 6 + − 12 24 ÷ ▲ = 6 × 12	Drag and Drop
29A	Complete the following sentence to explain why point P represents $\frac{4}{6}$. Select from the lists of choices to complete the statement. Point P represents the fraction $\frac{4}{6}$ because the number line from 0 to 1 is partitioned into 6 equal parts of size $\frac{1}{6}$, and the point is 4 lengths of this size from 0.	Drop-Down

Item Number	Correct Answer	Item Type
29B	Select from the lists of choices to complete the statement about the models that could be used. The models that could be used are Model J and [Model K] because [the area of the shaded parts in each model] is the same.	Drop-Down
30A	Example: Rafael can put 12 labels along the length of the board 8 times. $12 \times 8 = 96$ The least number of labels that Rafael needs to cover the board is 96.	Written Response
30B	Example: The least number of packages of labels that Rafael needs to buy is 16 because $96 \div 6 = 16$. OR Since there are 6 labels in each package, he needs 2 packages for each row. There will be 8 rows. $2 \times 8 = 16$	Written Response

Math Written Response Rubric Grade 3

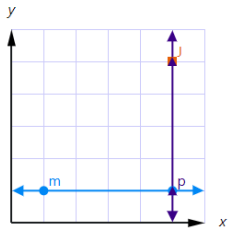
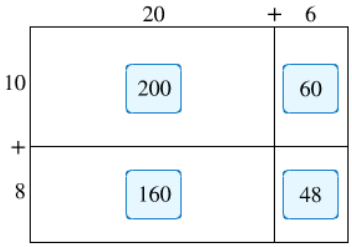
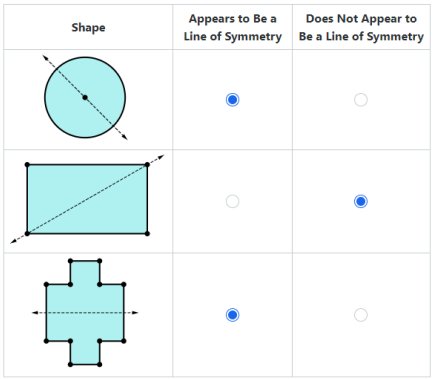
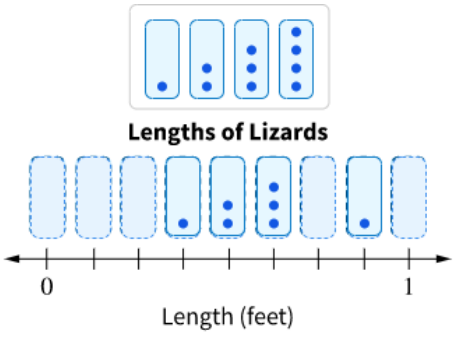
This question is worth 3 points. Each of the following components is worth 1 point.

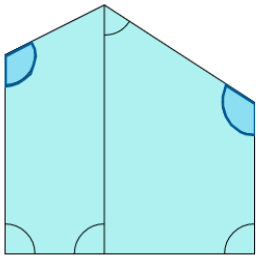
- In Part A, the response shows that the least number of labels needed to cover the board is 96.
- In Part B, the response shows that the least number of packages of labels that should be bought is 16.
    - NOTE: Correctly using an incorrect answer from Part A meets this component.
- In Parts A and B, the response shows understanding that numbers should be multiplied (or numbers should be repeatedly added) in Part A AND that numbers should be divided (or numbers should be repeatedly subtracted) in Part B OR shows that other appropriate strategies were used.

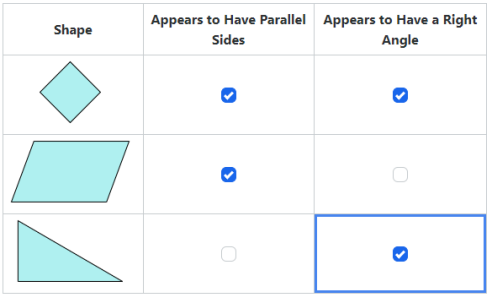
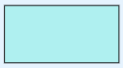
AK STAR
ALASKA SYSTEM OF ACADEMIC READINESS

Mathematics Grade 4 Practice Test Answer Key

Item Number	Correct Answer	Item Type
1	☑ 7 ☐ 9 ☑ 13 ☑ 23 ☐ 28 ☐ 35	Multiple Choice Multiple-Select
2	How many seats were empty? Enter your answer in the space provided. 4683 seats	Numeric Entry
3	◉ $\frac{6}{12} = \frac{4}{8}$	Multiple Choice Single-Select
4	Select from the list of choices to complete the statement. Triangle XYZ is an obtuse ▾ triangle.	Drop-Down
5	$\frac{2}{8}$	Fraction Entry
6	◉ $24 \times 3 + j = 80$	Multiple Choice Single-Select
7	How many jars does Ms. Nagy's class need? Enter your answer in the space provided. 20	Numeric Entry

Item Number		Item Type
8	◉ $0.06 < 0.10$	Multiple Choice Single-Select
9		Graphing
10	 $26 \times 18 =$ 468	Drag and Drop
11		Table
12	◉ 32°	Multiple Choice Single-Select
13	◉ $\frac{4}{8} < \frac{3}{5}$	Multiple Choice Single-Select
14		Drag and Drop

Item Number		Item Type
15	$\frac{38}{100}$	Fraction Entry
16	◉ $(1{,}400 \div 7) + (35 \div 7)$	Multiple Choice Single-Select
17		Zone
18	Enter your answer in the space provided. 2.05	Numeric Entry
19	3, 10, 17, 24	Multiple Numeric Entry
20	☐ $\frac{1}{6} + \frac{8}{2}$ ☐ $\frac{4}{1} + \frac{4}{12}$ ☐ $\frac{4}{10} + \frac{4}{2}$ ☑ $\frac{1}{12} + \frac{7}{12}$ ☐ $\frac{3}{4} + \frac{3}{4} + \frac{2}{4}$ ☑ $\frac{3}{12} + \frac{3}{12} + \frac{2}{12}$	Multiple Choice Multiple-Select
21	60000 meters	Numeric Entry

Item Number		Item Type
22		Table
23	◉ 40×12	Multiple Choice Single-Select
24	◉ $\frac{15}{4}$	Multiple Choice Single-Select
25	4000 grams	Numeric Entry
26	Enter your answer in the space provided. 800000	Numeric Entry
27	All angles are formed by two rays that share a common endpoint .	Drop-Down
28	◉ 	Multiple Choice Single-Select
29A	Enter your answer in the space provided. 36 feet	Numeric Entry
29B	Enter your answer in the space provided. 72 square feet	Numeric Entry
29C	For Plan F, the cost of the carpet is greater than the cost of the carpet for Plan G. For Plan F, the cost of the border is equal to the cost of the border for Plan G. Hubert will choose Plan G.	Drop-Down
30	The 8 in 8,439 represents a value of 8,000, while the 2 in 23,857 represents a value of 20,000.	Drop-Down

Item Number	Correct Answer	Item Type
30B	◉ 746 and 512	Multiple Choice Single-Select
30C	Example: Mr. Fluitt's numbers have different numbers of digits, so comparing the first digit of each number does not result in a correct comparison because the place value is different. The numbers I picked in Part B have the same number of digits, and the first digit of each number is different. Since the first digit of each number has the same place value, the number with the greater first digit is the greater number.	Written Response

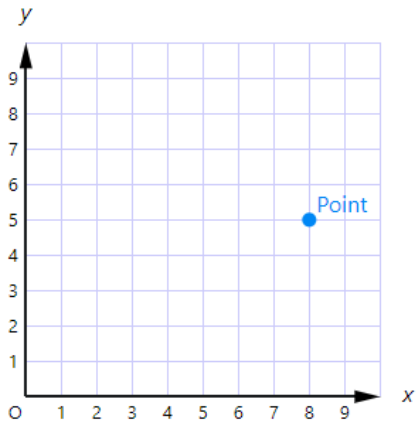
Math Written Response Rubric Grade 4

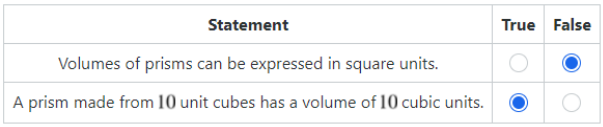
This question is worth 3 points. Each of the following components is worth 1 point.

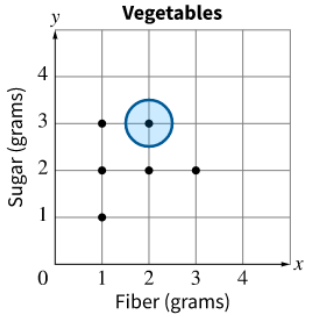
- In Part A, the response is correct.
- In Part B, the response is correct.
- In Part C, the response shows an understanding that place value is the reason why Joni's method does not always result in a correct comparison of numbers that each have a different number of digits.

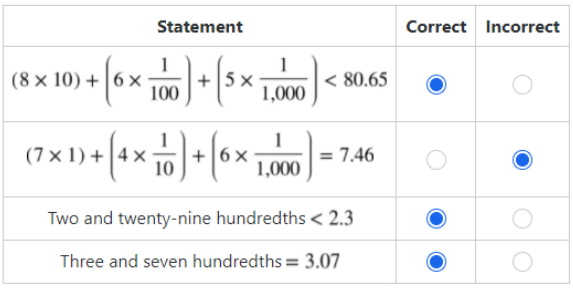
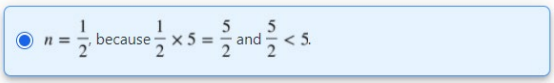
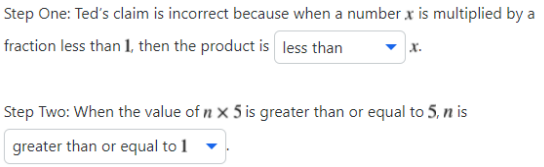
AK STAR
ALASKA SYSTEM OF ACADEMIC READINESS

Mathematics Grade 5 Practice Test Answer Key

Item Number	Correct Answer	Item Type
1	◉ $2\frac{1}{2}$	Multiple Choice Single-Select
2	◉ 432 cubic feet	Multiple Choice Single-Select
3		Graphing
4	◉ 18.75 square feet	Multiple Choice Single-Select
5	◉ $7\frac{8}{10}$	Multiple Choice Single-Select
6	◉ 15 gallons	Multiple Choice Single-Select
7	Enter your answer in the space provided. 17	Numeric Entry
8	Quotient: 161 Remainder: 15	Multiple Numeric Entry
9	◉ $\frac{3}{8}$	Multiple Choice Single-Select

Item Number		Item Type
10	$\frac{3}{8}$	Fraction Entry
11	◉ 45 cubic units	Multiple Choice Single-Select
12	The point is 2 units above the x-axis.	Drop-Down
13	18500 grams	Numeric Entry
14	Each term in pattern H is 6 more than the corresponding term in pattern G.	Drop-Down
15	Enter your answer in the space provided. .85	Numeric Entry
16	$\frac{17}{30}$	Fraction Entry
17		Table
18	◉ All rectangles are quadrilaterals. All quadrilaterals have 4 sides. Thus, all rectangles have 4 sides.	Multiple Choice Single-Select
19	◉ 22,655	Multiple Choice Single-Select
20	Ada walked between 5 and 6 miles this week.	Drop-Down

Item Number		Item Type
21	5 more than the product of 7 and 8 — $5+7\times8$ 8 more than the product of 5 and 7 — $5\times7+8$ 5 times the sum of 7 and 8 — $5\times(7+8)$ 8 times the sum of 5 and 7 — $(5+7)\times8$	Drag and Drop
22	Enter your answer in the space provided. 3127	Numeric Entry
23	Statement / True / False The total number of jars is 7. — False If all of the sand is equally redistributed among the jars, each jar would contain $\frac{4}{8}$ cup. — True The difference between the amount of sand in the jar that contains the most sand and the amount in the jar that contains the least sand is $\frac{5}{8}$ cup. — False	Table
24		Zone
25	There is $\frac{1}{5}$ package of paper to be shared evenly among 4 teachers. What fraction of the whole package will each teacher get? — $\frac{1}{5}\div4$ A teacher will place paper from 4 packages into stacks. Each stack will be $\frac{1}{5}$ of a whole package. How many stacks will there be? — $4\div\frac{1}{5}$	Drag and Drop
26	24	Multiple Choice Single-Select
27	305 cubic centimeters	Numeric Entry

Item Number	Correct Answer	Item Type
28		Table
29A		Multiple Choice Single-Select
29B		Drop-Down
30	Example: The volume of each small box is $6 \times 6 \times 4 = 144$ cubic inches. The volume of each carton is $36 \times 36 \times 36 = 46,656$ cubic inches. Since there are 972 small boxes, a total of $144 \times 972 = 139,968$ cubic inches of space is needed. $139,968 \div 46,656 = 3$; 3 cartons are needed. OR Since $36 \div 6 = 6$, $36 \div 6 = 6$, and $36 \div 4 = 9$, so 6 boxes would fit along the length, 6 boxes would fit along the depth, and 9 boxes would fit along the height. Then the total number of small boxes in each carton is $6 \times 6 \times 9 = 324$ boxes. Dividing 972 boxes by 324 boxes = 3 cartons.	Written response

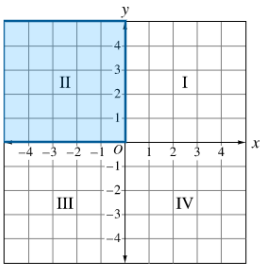
Math Written Response Rubric Grade 5

This question is worth 3 points. Each of the following components is worth 1 point.

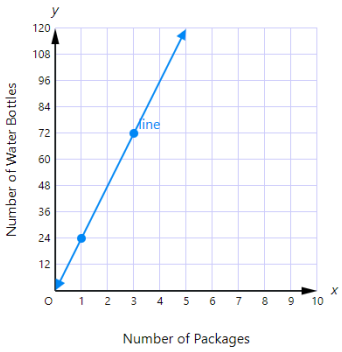
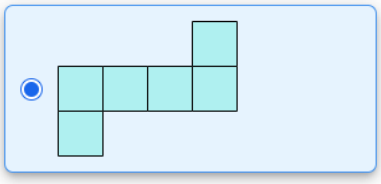
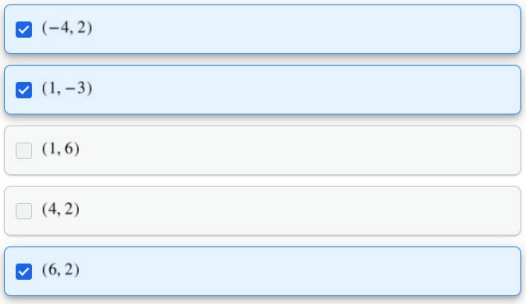
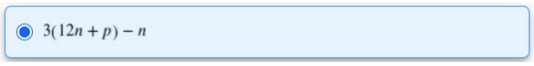
- The response shows that the volume of one small box and the carton should be calculated OR that the number of boxes that fit in each carton should be calculated.
- The response shows that the total volume of 972 small boxes should be divided by the total volume of one carton OR that the total number of boxes should be divided by the number of boxes that fit in 1 carton.
    - This component is met if the response correctly uses one or more incorrect values.
- The response shows a correct answer of 3 cartons.
    - This component is met if the response correctly uses incorrect volumes and/or numbers of boxes.
    - Units are not needed to meet this component.

AK STAR
ALASKA SYSTEM OF ACADEMIC READINESS

Mathematics Grade 6 Practice Test Answer Key

Item Number	Correct Answer	Item Type
1	◉ 77.6	Multiple Choice Single-Select
2	The number $-7\frac{1}{2}$ would be to the left of -7 on a horizontal number line because $-7\frac{1}{2} < -7$.	Drop-Down
3	Enter your answer in the space provided. 9	Numeric Entry
4		Zone
5	Equivalent to $6\frac{3}{4} \div \frac{9}{10}$: $6\frac{3}{4} \div 9 \div 10$ ○; $\frac{24+3}{4} \cdot \frac{10}{9}$ ◉ Not Equivalent to $6\frac{3}{4} \div \frac{9}{10}$: $6\frac{3}{4} \div 9 \div 10$ ◉; $\frac{24+3}{4} \cdot \frac{10}{9}$ ○	Table
6	24 balloon arrangements	Numeric - Member
7	$ 41.95	Numeric - Member
8	◉ 1 to 4	Multiple Choice Single-Select
9	◉ $3y - 1$	Multiple Choice Single-Select
10	60 cubes	Numeric Entry

Item Number	Correct Answer	Item Type
11	The weights that are less than the median display more variability than the weights that are greater than the median. For this set of data, the median is a better measure of center.	Drop-Down
12	◉ 9	Multiple Choice Single-Select
13	☐ 5 ☐ 6 ☑ 10 ☑ 11	Multiple Choice Multiple-Select
14	◉ 10, 20, 20, 25, 25, 28, 30, 30, 40	Multiple Choice Single-Select
15	Alexei learns how to spell 25 words per hour. At this rate, he will learn how to spell 500 words in 20 hours.	Drop-Down
16	w $-$ 3	Drag and Drop
17	◉ 18	Multiple Choice Single-Select
18	☑ 6 white marbles and 9 red marbles ☐ 12 white marbles and 13 red marbles ☑ 14 white marbles and 21 red marbles ☑ 22 white marbles and 33 red marbles ☐ 36 white marbles and 39 red marbles	Multiple Choice Multiple-Select
19	1125 dollars	Numeric Entry
20	◉ What is today's date?	Multiple Choice Single-Select

Item Number	Correct Answer	Item Type
21		Graphing
22	125 refrigerators	Numeric Entry
23		Multiple Choice Single-Select
24	The graph will be a ray that starts at 15 and points to the left. The graph will include the endpoint of the ray.	Drop-Down
25	30 miles per gallon	Numeric Entry
26		Multiple Choice Multiple-Select
27	Enter your answer in the space provided. 6	Numeric Entry
28		Multiple Choice Single-Select

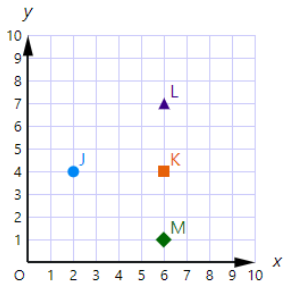
Item Number	Correct Answer	Item Type
29A	Least expensive: Store K Store M Store L Most expensive: Store J	Drag and Drop
29B	1200 dollars	Numeric Entry
30A	Jacob's claim is not valid. The information provided about the net can be used to find the area of each of the five faces of the prism, and the surface area of the prism can be found by adding the areas of the five faces. Each rectangular face has a width and a height that are shown in the figure, and the area of a rectangular face is found by multiplying the width by the height, so the areas of these three faces are $5\left(7\frac{1}{2}\right)$ square inches, $6\left(7\frac{1}{2}\right)$ square inches, and $5\left(7\frac{1}{2}\right)$ square inches. One of the triangular faces has a base of length of 6 inches and a height of 4 inches, and the area of this triangular face is found by multiplying $\frac{1}{2}$ by the base by the height, so the area of this face is $\frac{1}{2}(6)(4)=12$ square inches. The second triangular face must have the same side lengths and area as the first triangular face because the net can be folded to form a prism with two triangular faces and three rectangular faces, so the area of the second triangular face is also 12 square inches. The surface area of the prism is $5\left(7\frac{1}{2}\right)+6\left(7\frac{1}{2}\right)+5\left(7\frac{1}{2}\right)+\left(\frac{1}{2}(6)(4)\right)+12=144$ square inches.	Written Response
30B	Sophia's claim is not valid. If she doubles the lengths of each of the $7\frac{1}{2}$-inch edges of the prism, then she doubles the heights of the rectangular faces but she does not change the widths of the rectangular faces. Also, she does not change the bases of the triangular faces, and she does not change the heights of the triangular faces. She doubles the areas of the rectangular faces but does not change the areas of the triangular faces, so she does not double the surface area of the prism. The sum of the areas of the rectangular faces is $5\left(7\frac{1}{2}\right)+6\left(7\frac{1}{2}\right)+5\left(7\frac{1}{2}\right)=120$ square inches, and she changes this area to $5(15)+6(15)+5(15)=240$ if she doubles the lengths of the $7\frac{1}{2}$-inch edges. The surface area increases by $240-120=120$ square inches if she doubles the lengths of the $7\frac{1}{2}$-inch edges.	Written Response

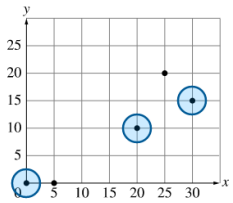
Math Written Response Rubric Grade 6

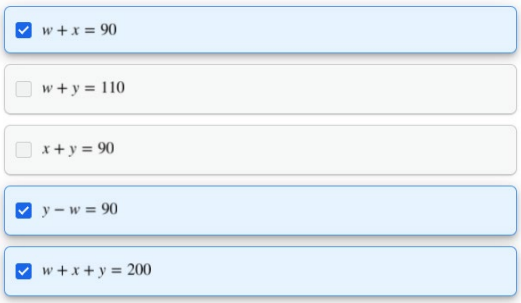
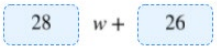
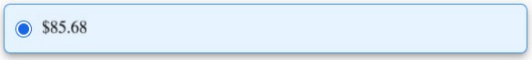
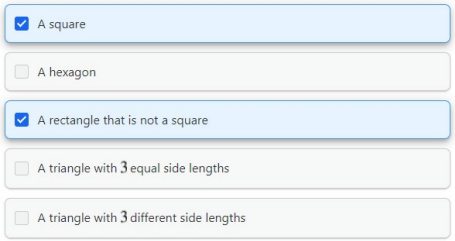
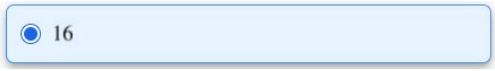
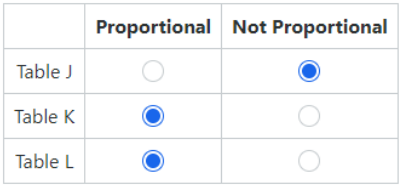
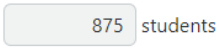
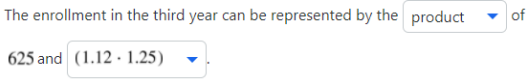
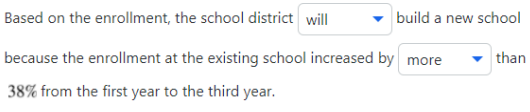
This question is worth 3 points. Each of the following components is worth 1 point.

- In part A, the response explains that the claim is not valid and provides evidence of understanding how to find the surface area of the prism.
- In part A, the response gives the correct surface area: 144 square inches.
- In part B, the response explains that the claim is not valid and provides evidence of understanding why the surface area of the prism does not double if Sophia doubles the lengths of the 7.5-inch edges.
- In part B, the response gives the correct increase in the surface area of the prism if Sophia doubles the lengths of the 7.5-inch edges: 120 square inches.

Mathematics Grade 7 Practice Test Answer Key

Item Number	Correct Answer	Item Type
1	◉ $-3.5 + 2.5$	Multiple Choice Single-Select
2	The city with the greatest difference in low and high temperatures was Lima . The city with the least difference in low and high temperatures was Helena .	Drop-Down
3	$\frac{-5}{6}$	Fraction Entry
4	◉ 28 hours	Multiple Choice Single-Select
5	☑ $1.15p$ ☐ $\frac{15}{100}p$ ☐ $p + 15$ ☑ $p + 0.15p$ ☐ $p + 1.15p$	Multiple Choice Multiple-Select
6	40 copies per minute	Numeric Entry
7		Graphing
8	◉ 20,000	Multiple Choice Single-Select

Item Number		Item Type
9	90 people	Numeric Entry
10	Manuel's scores tended to be less than Akira's scores. Manuel's scores displayed more variability compared to Akira's scores.	Drop-Down
11		Zone
12	$y = 0.5x$	Multiple Choice Single-Select
13	18	Multiple Choice Single-Select
14	Unlikely / Neither likely nor unlikely / Likely; Event L / Event J / Event K	Drag and Drop
15	16π	Multiple Choice Single-Select
16	300	Multiple Choice Single-Select
17	7 square centimeters	Numeric Entry
18	Only the group of men	Multiple Choice Single-Select
19	56	Multiple Choice Single-Select
20	100 square feet per hour	Numeric Entry

Item Number		Item Type
21		Multiple Choice Multiple-Select
22		Drag and Drop
23		Multiple Choice Single-Select
24		Drop-Down
25		Multiple Choice Multiple-Select
26		Fraction Entry
27		Multiple Choice Single-Select
28		Table
29A		Composite - Discrete
29B		Drop-Down
29C		Drop-Down

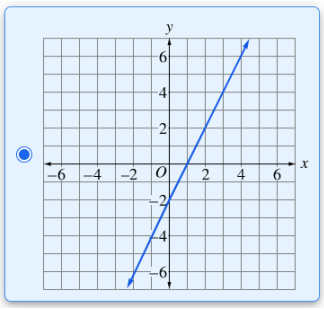
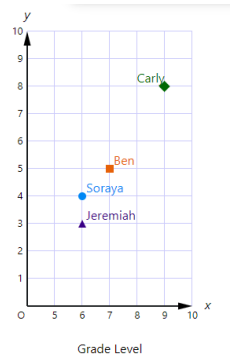
Item Number	Correct Answer	Item Type
30A	Morgan's claim is not correct. The floor of her old bedroom is a square with an area of (12 feet) (12 feet) = 144 square feet. In the scale drawing, 1 inch represents 2 feet, so 4.5 inches represent 9 feet and 7 inches represent 14 feet. The floor of the new bedroom is a rectangle with a length of 14 feet and a width of 9 feet. The area of the floor of the new bedroom is (14 feet) (9 feet) = 126 square feet. The area of the floor of the new bedroom is less than the area of the floor of the old bedroom.	Written Response
30B	Morgan's claim is not correct. Based on the scale drawing, the length of the wall with a window is 9 feet, which is equal to 108 inches, since 1 foot is equal to 12 inches. If Morgan arranges the desk and chair at the foot of the bed so that she can sit at the desk, the total length of the bed, desk, and chair will be at least 81 inches + 34 inches = 115 inches. Since 115 inches is greater than the length of the wall with a window, Morgan cannot arrange her furniture as she claims.	Written Response

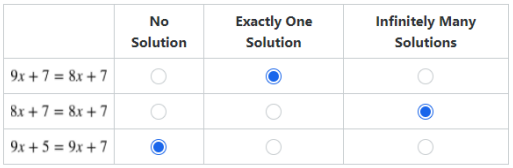
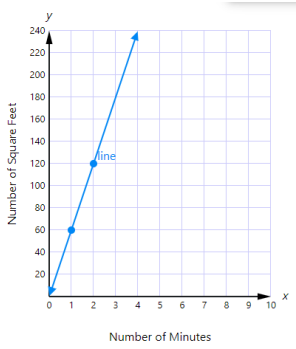
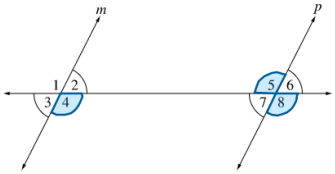
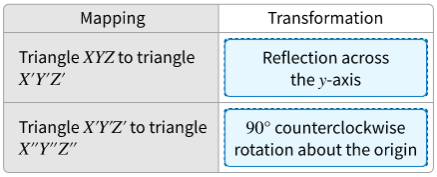
Math Written Response Rubric Grade 7

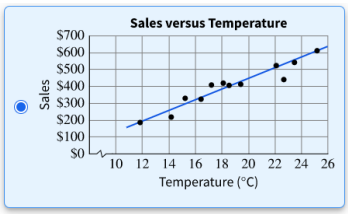
This question is worth 4 points. Each of the following components is worth 1 point.

- In Part A, the response shows evidence of understanding how to correctly apply a given scale factor to find either dimension of the new bedroom floor, in feet.
- In Part A, the response includes the areas of both floors, in square inches or square feet.
- In Part A, the response shows evidence of understanding that the claim is incorrect and the reasons why.
    - NOTE: A response that includes an explanation based on correctly comparing incorrect areas meets this component.
- In Part B, the response shows evidence of understanding that the claim is incorrect and the reason why.
    - NOTE: A response that includes an explanation based on correctly comparing the sum of 81 and 31 with an incorrectly calculated width, in feet, meets this component.

Mathematics Grade 8 Practice Test Answer Key

Item Number	Correct Answer	Item Type
1	◉ $\frac{1}{8}$	Multiple Choice Single-Select
2	◉ $\pm\frac{7}{4}$	Multiple Choice Single-Select
3	The minimum distance from Earth to Mars is approximately 1.57×10^2 times the minimum distance from Earth to the Moon.	Drop-Down
4	☑ -72 ☑ $\frac{4}{5}$ ☐ $\sqrt{6}$ ☐ $\sqrt{\frac{5}{16}}$ ☑ $\sqrt{100}$	Multiple Choice Multiple-Select
5	◉ 	Multiple Choice Single-Select
6		Graphing

Item Number		Item Type
7		Table
8	20 degrees	Numeric Entry
9		Graphing
10	$y = -\frac{1}{2}x - 2$	Multiple Choice Single-Select
11		Zone
12	$y = 15x + 300$	Multiple Choice Single-Select
13		Drag and Drop
14	$\frac{2}{1}$	Fraction Entry
15	From P to Q	Multiple Choice Single-Select
16	The total amount raised from selling 40 key chains is less than the total amount raised from selling 40 coffee cups by 2 dollars.	Drop-Down

Item Number		Item Type
17		Multiple Choice Single-Select
18	◉ 108π	Multiple Choice Single-Select
19	☑ $y - 1 = \frac{4}{x^2} - \frac{x^2}{4}$ ☐ $5 = -2x - 3 + y$ ☐ $y + 2x = 5x - 5$ ☑ $y = \frac{1}{x} + 1$ ☑ $y = x^2 - 4x + 5$	Multiple Choice Multiple-Select
20	◉ Of all the students, 27% participate in both school sports and community service.	Multiple Choice Single-Select
21	(-4 , 3)	Multiple Numeric Entry
22	The slope of the graph of function J is [greater than] the slope of the graph of function K. The y-intercept of the graph of function J is [less than] the y-intercept of the graph of function K.	Drop-Down
23	Step 1: area of large square = area of 4 right triangles + area of small square Step 2: $(a + b)^2 = 4 \cdot \frac{1}{2} \cdot ab + c^2$	Drag and Drop
24	$y =$ -2 $x +$ 10	Multiple Numeric Entry
25	☐ Running 1 mile will cause the runner to use 1,725 calories. ☑ A runner who runs 2 miles on one day is predicted to use 1,830 calories that day. ☑ For each increase of 1 mile run per day, the number of calories used tends to increase, on average, by 105.	Multiple Choice Multiple-Select

Item Number		Item Type
26	$c =$ 1 and $d =$ 12	Multiple Numeric Entry
27	◉ $y = 2x + b$	Multiple Choice Single-Select
28	$\frac{180}{181}$	Fraction Entry
29A	$y =$ 1200 $x +$ 400	Numeric Entry
29B	$y =$ 1300 $x +$ 250	Numeric Entry
29C	Jorge should rent an apartment at Complex J. The difference in total cost when $x = 5$ is $350.	Drop-Down
30A	Linda's claim is incorrect because she said the slope is run over rise. The slope is actually rise over run, or the change in y over the change in x. The slope of $\overline{PR}$ is $-\frac{2}{3}$ because $\frac{3-(-1)}{-3-3}=\frac{4}{-6}=-\frac{2}{3}$.	Written Response
30B	Triangles MNP and QRT are similar because the corresponding angles at N and R and the corresponding angles at P and T are congruent since they are corresponding angles where two parallel lines are intersected by a transversal. Because the triangles are similar, the ratios of corresponding sides of the triangles are equal. This means $\frac{MN}{NP}=\frac{QR}{RT}$ and shows that the slopes of $\overline{NP}$ and $\overline{RT}$ are equal.	Written Response

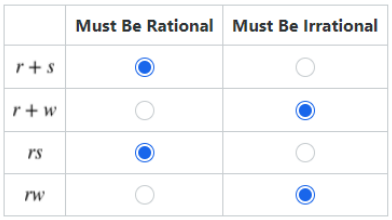
Math Written Response Rubric Grade 8

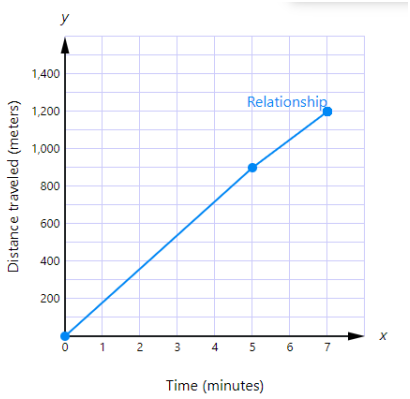
This question is worth 4 points. Each of the following components is worth 1 point.

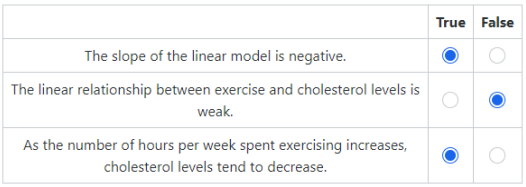
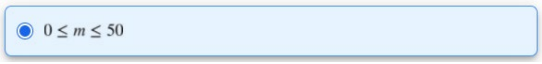
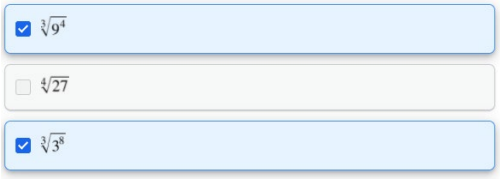
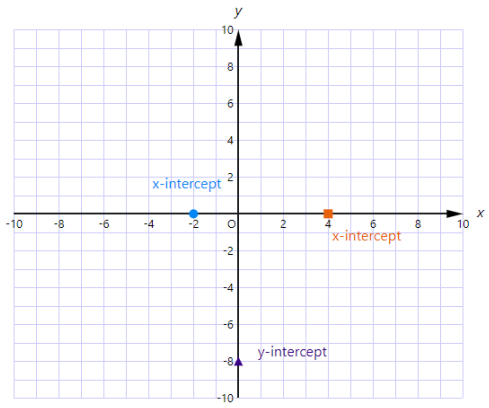
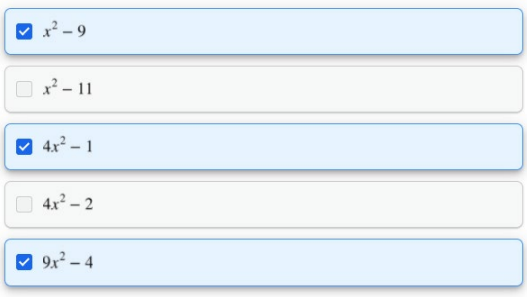
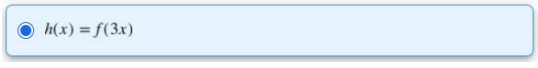
- The response provides an explanation of the error in Linda's claim.
- The response shows the correct calculation and identification of the slope.
- The response provides correct reasoning about the slopes being equal, which includes the fact that the triangles are similar.
- The response provides correct reasoning about the slopes being equal because the ratios are equal, which includes the fact that the ratios of corresponding sides of the triangles are equal.
    - Note: If the response to Part B only contains calculations of the slopes of the segments without using the similar triangle concept, both points may be awarded as long as both slopes are calculated correctly.

AK STAR
ALASKA SYSTEM OF ACADEMIC READINESS

Mathematics Grade 9 Practice Test Answer Key

Item Number	Correct Answer	Item Type
1	◉ $100 = 35 + 20w$	Multiple Choice Single-Select
2	$c = \frac{3}{5}$	Fraction Entry
3	◉ 0.074	Multiple Choice Single-Select
4	12 $x^2 +$ 5 $x +$ -2	Multiple Numeric Entry
5		Table
6	◉ 100 pencils and 20 pens	Multiple Choice Single-Select
7	0.15 $x +$ 0.75 $y \leq 30$ 3 $y \leq$ 1 x	Drag and Drop
8	The median running time of group J is greater than the median running time of group K. The interquartile range of running times for group J is equal to the interquartile range of running times for group K.	Drop-Down
9	◉ $c > 0$	Multiple Choice Single-Select
10	The maximum height was greater for Team Q's water balloon, and the number of seconds after launch required to reach the maximum height was greater for Team Q's water balloon.	Drop-Down
11	$C =$ 150 $m +$ 3000	Multiple Numeric Entry

Item Number		Item Type
12	◉ $t_n = -4(n-1)$	Multiple Choice Single-Select
13	◉ $1{,}000(1.049)^t$	Multiple Choice Single-Select
14	◉ $a = \frac{c-5}{2}$	Multiple Choice Single-Select
15	$b =$ -12	Numeric Entry
16	$x =$ -3 $x =$ 1	Multiple Numeric - Discrete
17		Graphing
18	$a =$ 2 ; $b =$ 3	Multiple Numeric Entry
19	☐ There were 185 members in the club when the advertisement was published. ☑ There were 215 members in the club 2 months after the advertisement was published. ☑ Membership in the club increased by the same amount each month for $m \geq 1$. ☐ There were the same number of members at the end of month 2 as there were at the end of month 3. ☐ One new member joined the club every 2 days since the advertisement was published.	Multiple Choice Multiple-Select
20	◉ Between 13 and 15 years	Multiple Choice Single-Select

Item Number		Item Type
21		Table
22		Multiple Choice Single-Select
23		Multiple Choice Multiple-Select
24		Multiple Numeric Entry
25		Drag and Drop
26		Graphing
27		Multiple Choice Multiple-Select
28		Multiple Choice Single-Select

Item Number	Correct Answer	Item Type
29A	$0 < x < 3$	Drag and Drop
29B	The statement is incorrect, and $x = 1.5$ is a counterexample.	Multiple Choice Single-Select
30A	The value of the car is best modeled with an exponential function, because the value is decreasing at a constant percent rate of 15% per year.	Written Response
30B	The situation can be modeled by the function $v(t) = p \cdot (0.85)^t$, where p is the value of the car when it was purchased, t is the number of years since it was purchased, and v is the current value of the car. The fact that the value of the car 2 years after it was purchased was \$17,918 can be used to find the value of the car when it was purchased by substituting into the function and solving for p. $17{,}918 = p \cdot (0.85)^2$ $17{,}918 = 0.7225p$ $p = 24{,}800$ This means that p, the value of the car when it was purchased, was \$24,800.	Written Response

Math Written Response Rubric Grade 9

This question is worth 4 points. Each of the following components is worth 1 point.

- In Part A, the response shows that the situation can be modeled by an exponential function and provides a correct explanation.
- In either Part A or Part B, the response contains the correct decay factor of 0.85. This may not be explicit but should be apparent in the work shown.
- In Part B, the response contains a reasonable computation (between \$23,000 and \$25,000) for the original price based on the work shown.
- In Part B, the response provides an equation, process, or explanation for the computation.

AK STAR
ALASKA SYSTEM OF ACADEMIC READINESS

ELA Grade 3 Practice Test Answer Key

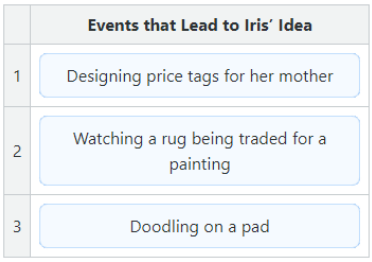
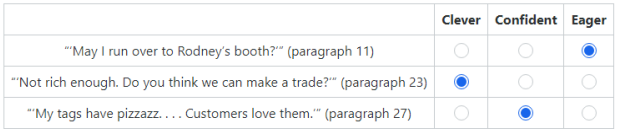
Item Number	Correct Answer	Item Type
1	**country** *noun* 1. all the land of a nation 2. the people of a nation 3. the place where a person was born or is a citizen **4. an open area outside of a big town or city**	Select in Passage
2	◉ the neighbors will discover her family eats weeds.	Multiple Choice Single-Select
3	**Sentence from the Passage** / **Feelings** "It seemed to take hours to fill the bags." (paragraph 24) — bored "I landed smiling at the sky and shin-high in the yellow flowers." (paragraph 26) — playful	Drag and Drop
4	◉ step on and crush	Multiple Choice Single-Select
5	The picture at the end of the passage **best** supports the idea that Athena is happy with the dinner party. ▾	Drop-Down
6A	◉ Be willing to have new experiences.	Multiple Choice Single-Select
6B	◉ "I closed my eyes and made a wish: to be as open-minded as my family and my new friend." (paragraph 48)	Multiple Choice Single-Select
7	◉ there are no buses to take them to school.	Multiple Choice Single-Select
8A	◉ different	Multiple Choice Single-Select
8B	◉ "It may include boiled or smoked fish, chicken, eggs, goat meat, or bush meat." (paragraph 8)	Multiple Choice Single-Select

Item Number		Item Type
9	When there is work to do after school, the girls do it first. They might wash dishes, shuck corn, get water from the river and firewood from the forest, feed the goats, spread cocoa beans to dry, weed the fields, or bathe Becki's youngest sister. Once their work is done, they are free to play. Sometimes they pick oranges, jump rope, dance, or play mancala (a board game). The boys prefer to race toys—small wheels at the end of sticks—that they built from scraps.	Select in Passage
10	1 Arrived at school 2 Buy breakfast 3 Sing a song 4 Go to classes	Drag and Drop
11	◉ like spending time together.	Multiple Choice Single-Select
12	◉ "Becki and Bonsa are part of the Ashanti tribe of Ghana, an English-speaking West African country." (paragraph 2)	Multiple Choice Single-Select
13	◉ Culture and Life in Ghana	Multiple Choice Single-Select
14	(1) Camels live in hot, dry deserts. (2) Most animals could not live in the desert. (3) Some deserts on Earth are cold, but they do not get much rain. (4) What helps the camel be able to live there?	Select in Passage
15	The desert sand is hot and deep, but ▾ the camel has large feet to keep him from sinking.	Drop-Down
16	(9) Also, the camel can go for a week in great heat without haveing to drink water.	Select in Passage
17	◉ A camel's body is made for living in the desert.	Multiple Choice Single-Select

Item Number	Correct Answer	Item Type
18	◉ What Kids and Parents Believe	Multiple Choice Single-Select
19	☑ "One good thing is the video games that children play today often encourage them to work in teams, cooperate, and to help each other." (paragraph 8) ☐ "This is because games today are often designed for multiple players, not like old-fashioned video games that were mostly designed for one player." (paragraph 8) ☐ "However, children who are obsessed with video games and play them for a long time can get really competitive and can often try to win at all costs." (paragraph 9) ☐ "Experts aren't sure yet, but they have real concerns that this might lead to kids acting like this in real life too." (paragraph 9) ☑ "One thing you might also like to know is that kids who regularly play video games often get higher grades in math, science, and reading tests." (paragraph 10)	Multiple Choice Multiple-Select
20	According to the section of the passage "What Do Experts Say?," a good thing about video games is that they can teach children to [work in teams,] but they can also make children feel like they need to always [be the winner of the activity.]	Drop-Down
21	There are two things that children and parents can do to make playing video games a positive activity. Play video games with your parents so they know that they are not all bad." Also "Play educational video games such as solving puzzles. Don't always play fighting games.	Written Response
22	◉ It can change friendships.	Multiple Choice Single-Select
23	The author of the passage thinks video games should be [the right type for a child's age.]	Drop-Down
24a	◉ It is important to spend time on other activities, not just on video games.	Multiple Choice Single-Select
24b	◉ "It's hard to get enough active play and exercise if you're always inside playing video games." (paragraph 3)	Multiple Choice Single-Select
25	◉ Video games have ratings.	Multiple Choice Single-Select

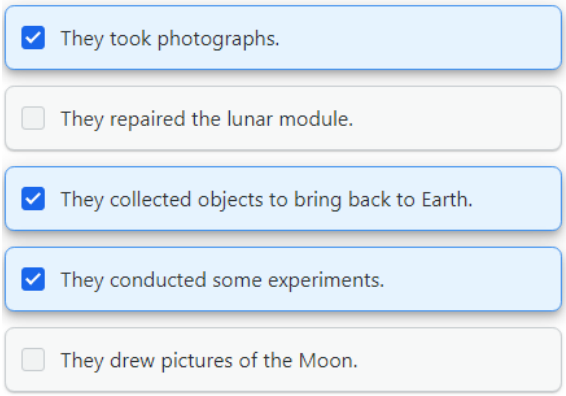
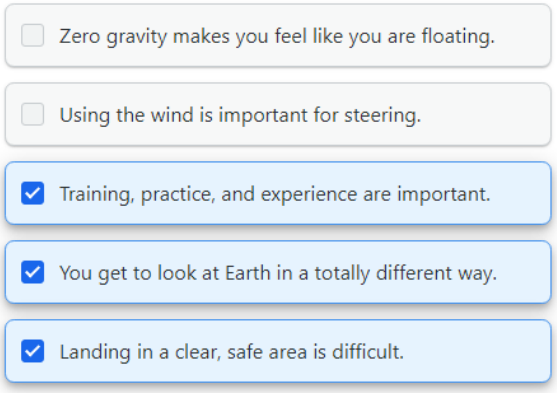
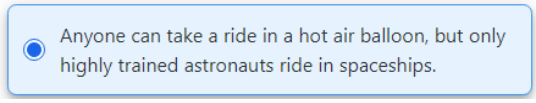
Item Number	Correct Answer	Item Type
26	◉ To teach readers how video games can be both harmful and helpful	Multiple Choice Single-Select

ELA Grade 4 Practice Test Answer Key

Item Number	Correct Answer	Item Type
1	Iris grinned. "I hope they'll help you sell lots of paintings so I can buy that kaleidoscope." Mom had promised to share the profits with Iris if she helped out—five cents for every dollar's worth of sales.	Select in Passage
2	◉ She has thought of a plan.	Multiple Choice Single-Select
3		Drag and Drop
4	◉ admires the beauty of the banner Iris made for her mom.	Multiple Choice Single-Select
5	◉ Often people need creative solutions to solve problems.	Multiple Choice Single-Select
6		Table
7	In the first paragraph, the author asks the question, "Who wants a bedtime story?" to build interest for the reader of the passage. The author offers a possible answer to the question to introduce the topic of the passage.	Drop-Down
8	**engage** *verb* 1. to become interested or involved 2. to enter into an agreement 3. to promise to marry 4. to prepare for fighting	Select in Passage

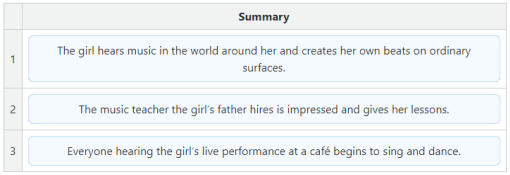
Item Number		Item Type
9	☐ The types of foods that dogs eat ☑ The signs of worry in dogs ☑ Strategies for approaching dogs ☑ Ways to reward dogs ☐ The types of scents that dogs like	Multiple Choice Multiple-Select
10	☐ Paragraph 8 ☑ Paragraph 9 ☑ Paragraph 10 ☐ Paragraph 11 ☐ Paragraph 12	Multiple Choice Multiple-Select
11A	◉ Both dogs and volunteers benefit from shelter reading programs.	Multiple Choice Single-Select
11B	◉ Paragraphs 2 and 4	Multiple Choice Single-Select
12	☐ The Humane Society of Missouri needed money. ☑ Rescue dogs were not comfortable in the shelter environment. ☐ Photographs of dogs showed that they were hiding in the back of their cages. ☑ Children who visited the shelter wanted to help the dogs. ☐ The shelter wanted to add more classes for children to its education program.	Multiple Choice Multiple-Select
13	◉ Does barking affect dogs' adoption success rates?	Multiple Choice Single-Select
14	◉ However,	Multiple Choice Single-Select
15	◉ On some days, stratus clouds blocked the Sun like a gray blanket as a drizzly rain fell from the sky.	Multiple Choice Single-Select
16A	◉ calender	Multiple Choice Single-Select
16B	calendar	Text Entry

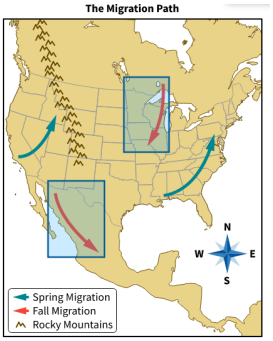
Item Number		Item Type
17	◉ Changing "observed" to "observe"	Multiple Choice Single-Select
18	◉ The balloon moves at the same speed as the wind.	Multiple Choice Single-Select
19	◉ By moving the balloon up or down to catch different winds	Multiple Choice Single-Select
20	1 Giant fans blow cold air into the envelope. 2 A propane burner heats the air inside the envelope. 3 The warm air causes the envelope to expand and rise, lifting the basket up.	Drag and Drop
21	Teamwork is very important when launching and landing hot air balloons because before launching a hot air balloon you have to tether it to a van so the passengers can get in. For example the text says when landing the pilot looks for a place to land from above. If the pilot thinks he found an open field he would contact the chasers asking if the land had no crops or if it has an accessible road. If it included those details then the pilot would land. That is why teamwork makes the dream-work.	Written Response
22A	◉ Order of events	Multiple Choice Single-Select
22B	◉ Moments from the Moon landing are described in sequence.	Multiple Choice Single-Select
23	◉ "We haven't been back—but wouldn't it be wonderful if we could?" (paragraph 7)	Multiple Choice Single-Select

Item Number		Item Type
24		Multiple Choice Multiple-Select
25		Multiple Choice Multiple-Select
26		Multiple Choice Single-Select

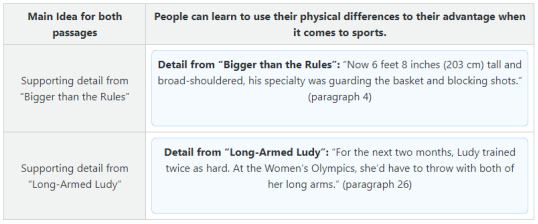
AK STAR
ALASKA SYSTEM OF ACADEMIC READINESS

ELA Grade 5 Practice Test Answer Key

Item Number	Correct Answer	Item Type
1	◉ No one believes girls can be good drummers.	Multiple Choice Single-Select
2	When she walked under wind-wavy palm trees in a flower-bright park she heard the whir of parrot wings the clack of woodpecker beaks the dancing tap of her own footsteps and the comforting pat of her own heartbeat.	Select in Passage
3	◉ revealing that the girl has talent and willingness to work.	Multiple Choice Single-Select
4	The girl is similar to her big sisters in that they all love to make music. ▾ The girl is different from her big sisters in that she chooses an instrument girls rarely play. ▾	Drop-Down
5		Drag and Drop
6A	◉ inspire people to change their minds.	Multiple Choice Single-Select
6B	◉ Lines 95 through 102	Multiple Choice Single-Select

Item Number		Item Type
7	If you see one with orange-and-black patterned wings, you may be looking at a monarch on the trip of a lifetime. Monarch butterflies make what is believed to be the world's longest insect migration, traveling from parts of North America as far north as Canada to as far south as central California and Mexico.	Select in Passage
8	"They may be tiny, but they are mighty." (paragraph 2)	Multiple Choice Single-Select
9		Zone
10	According to paragraph 9, tens of millions of monarchs travel from east of the Rockies to Mexico's Sierra Madre.	Drop-Down
11	There is no milkweed growing in Mexico.	Multiple Choice Single-Select
12	Student Note / Should Be Included / Should Not Be Included Monarchs eat differently at different stages. — Should Be Included Monarchs cluster together at night. — Should Not Be Included Monarchs drink nectar often as they fly. — Should Be Included Monarchs become semi-dormant in Mexico. — Should Not Be Included	Table
13	A video about the life cycle of monarch butterflies A scientist's personal journal kept while watching fourth-generation monarchs An illustrated report showing the decrease of American wildflowers An article explaining how oyamel fir forest removal has affected the environment A time line showing past and possible future earthquakes in California	Multiple Choice Multiple-Select
14	Pigs make great companions, but they can be naughty and stubborn.	Drop-Down

Item Number		Item Type
15	(6) Pet pigs are different [ ] from farm pigs [ ] in that they are smaller. (7) Because [ ] they are smaller [,] they can live inside.	Drag and Drop
16A	(9) Pigs need time outside because they like to poke around and explore. (10) Like dogs, pigs enjoyed being petted and having their bellies scratched.	Select in Passage
16B	enjoy	Text Entry
17	◉ A smart and friendly pig might be the right pet for you!	Multiple Choice Single-Select
18	Even though young Mikan was [awkward when he moved,] it did not stop him from [enjoying his favorite sport.]	Drop-Down
19	☑ He wore glasses. ☐ He once broke his leg. ☐ He played the piano. ☑ He was too tall. ☐ He was a fast runner. ☐ He took dancing lessons.	Multiple Choice Multiple-Select
20	◉ "So Mikan learned to shoot baskets from farther back." (paragraph 15)	Multiple Choice Single-Select
21	Example Student Response Ray Meyer did play an important role in Mikan becoming a succsessful athlete. How he played an important role is that, first of all, he was the coach had faith in him, even when other schools were rejecting him. This is important because if Ray had rejected him, Mikan might not have become a great basketball player. The second way Ray was important in the success of Mikan is how he trained him. The coach asked the boxing team to show him how to jump rope and punch the light bag. The coach also made him take dance lessons. All of this helped him.	Written Response

Item Number		Item Type
22	◉ Paragraph 15	
23	◉ It encourages her to take challenges.	
24	☑ "Did she even have a chance?" (paragraph 20) ☐ "Ludy whooped, 'Ooh la la!'" (paragraph 25) ☐ "Would they be kind?" (paragraph 29) ☑ "Was she good enough to win?" (paragraph 31) ☐ "Ludy thought of Coach Bartlett and her thirteen hundred friends at college." (paragraph 35)	Multiple Choice Multiple-Select
25	◉ They both practiced in new ways to learn different skills.	Multiple Choice Single-Select
26		Drag and Drop

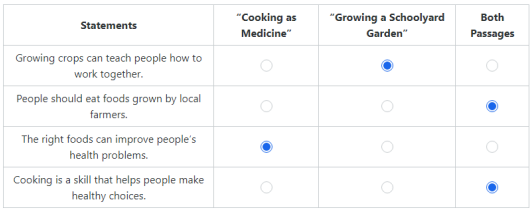
AK STAR
ALASKA SYSTEM OF ACADEMIC READINESS

ELA Grade 6 Practice Test Answer Key

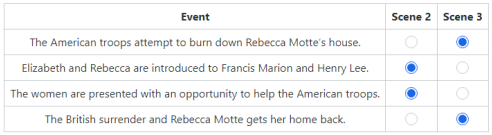
Item Number	Correct Answer	Item Type
1	In paragraph 9, the author describes the goose as being **too honest to be puffed up by this flattery** to show that the goose is [humble.]	Drop Down
2A	(•) He is lying to the goose.	Multiple Choice Single-Select
2B	(•) "'It is the sun beating down,' the wolf would reply. . ." (paragraph 12)	Multiple Choice Single-Select
3	[ ] It explains why the wolf and the goose are enemies. [ ] It explains why the goose is better than the wolf. [x] It shows the lessons that the goose is trying to teach the wolf. [x] It shows that the goose and the wolf have conflicting points of view. [ ] It shows that the wolf and the goose have some things in common.	Multiple Choice Multiple-Select
4	1 The wolf is unhappy that he cannot fly and comes up with a plan. 2 The wolf steals feathers from the goose because he wants to fly. 3 The wolf builds a pair of wings and leaps off a mountain. 4 The wolf is caught by a hunter and is forced to work.	Drag and Drop
5	Description / Goose / Wolf / Both Is jealous of others: ( ) (•) ( ) Thinks sensibly: (•) ( ) ( ) Has limited abilities: ( ) ( ) (•) Tries to be content: (•) ( ) ( )	Table
6A	(•) Be happy with who you are and what you can do.	Multiple Choice Single-Select

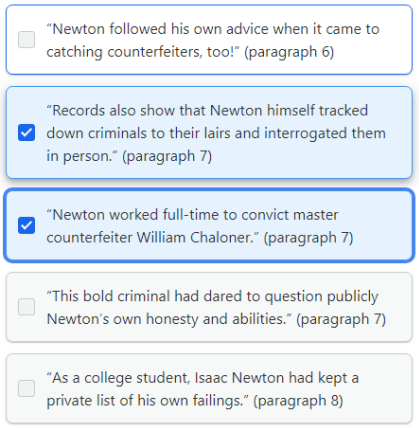
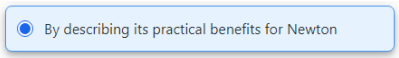
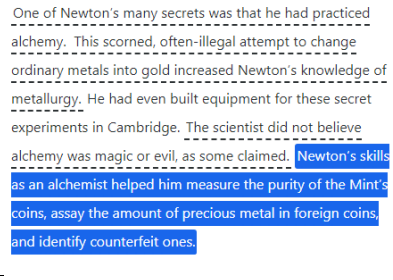
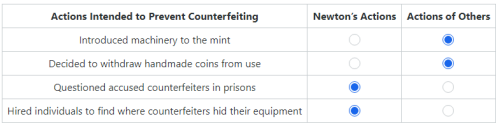
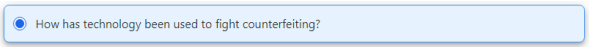
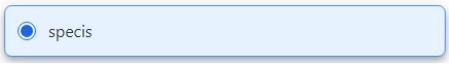
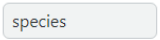
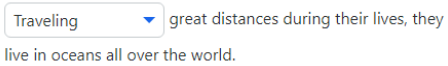
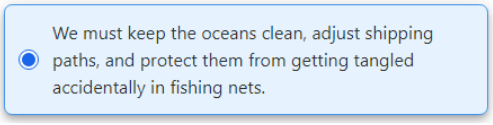
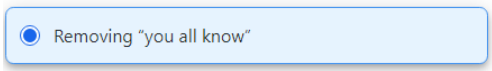
Item Number		Item Type
6B	◉ "'Had I heeded the grey goose and been satisfied to be a good wolf, I should be safe in my house to-day!'" (paragraph 35)	Multiple Choice Single-Select
7	◉ He had observed elements in nature moving upward.	Multiple Choice Single-Select
8	In order to see whether he could create something that would float "up the chimney with the smoke," Joseph first made [a paper bag.] After he succeeded, he attempted the same experiment using [a piece of silk.]	Drop-Down
9	**demonstration** *noun* 1. an expression of feelings 2. a show of armed force 3. a march for a cause 4. a display	Select in Passage
10	In the last sentence of paragraph 18, the author uses [an unlikely comparison] to show that people believed that hot-air balloons would allow them to one day [see new parts of the Earth.]	Drop-Down
11	◉ "Once in the air, another gust tilted it and sent a plume of smoke streaming out its side." (paragraph 21)	Multiple Choice Single-Select
12	1 Joseph successfully managed to get a small paper bag to fly up the chimney. 2 Joseph and Étienne designed a large, round bag held together by buttons. 3 In front of an audience, Joseph and Étienne's balloon flew for ten minutes. 4 In front of the royal family, Joseph and Étienne effectively sent a basket carrying animals into the air.	Drag and Drop
13	Book / Likely to Be Helpful / Unlikely to Be Helpful *The Greatest Accomplishments of Marie Antoinette: A Queen* ○ ◉ *A Traveler's Guide to Versailles* ○ ◉ *The Montgolfier Brothers and Their Successful Experiment* ◉ ○ *Flying High: The History of Aviation* ◉ ○ *Science Projects for Beginners: A How-To Guide* ○ ◉	Table
14	When it rains, snows, or even sleets, what makes it possible for [someone] to continue to drive safely?	Select in Passage
15	◉ However,	Multiple Choice Single-Select
16A	Anderson was convinced that there had to be a better solution, and she started to skech what she was picturing in her mind: a blade that could be operated from inside the vehicle.	Select in Passage

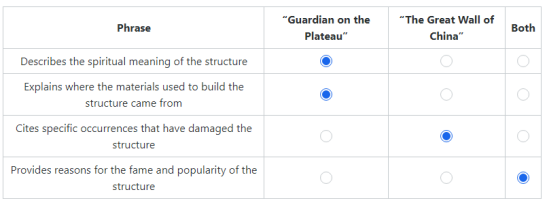
Item Number		Item Type
16B	sketch	Text Entry
17	◉ Sentence 12	Multiple Choice Single-Select
18	◉ "Nationwide, at least 10 medical schools teach cooking as a form of medicine, according to the medical journal *Population Health Management*." (paragraph 8)	Multiple Choice Single-Select
19	☐ A doctor asks patients to make a list of their favorite restaurants. ☑ A doctor teaches a free meal-preparation class to patients at a local clinic. ☑ A doctor shares a recipe containing foods that could help ease a patient's stomach pain. ☐ A doctor encourages a patient to visit a popular health-food store. ☐ A doctor tells a patient to purchase more produce from local farms.	Multiple Choice Multiple-Select
20	☐ "Maria worries about heart disease and has tried several diets in the past without success." (paragraph 21) ☑ "The salmon uses healthy fats to add flavor and make the patient feel full, she explained." (paragraph 23) ☐ "A salad with Greek yogurt dressing was also served." (paragraph 27) ☑ "He and his teammates chose their recipe because they learned that pickled foods and yogurt can improve gut health." (paragraph 29) ☐ "His team thought that if their patient likes Chipotle, then she would probably enjoy the spicy flavors of bibimbap." (paragraph 29)	Multiple Choice Multiple-Select
21	◉ ". . . the Edible Schoolyard doesn't use any chemical fertilizers . . ." (paragraph 5)	Multiple Choice Single-Select
22	According to the passage, the students use compost in their garden because it [improves the quality of the soil ▾] while also [providing a use for leftover waste. ▾]	Drop-Down
23A	◉ pay attention to the sources of their food.	Multiple Choice Single-Select

Item Number	Correct Answer	Item Type
23B	◉ "They plant their crops by hand, build frames out of bamboo to support plants, learn about the seasons in the garden, and maintain the compost pile." (paragraph 4)	Multiple Choice Single-Select
24	◉ "Each day, the students make delicious, healthy dishes. They gather together to share what they have prepared." (paragraph 5)	Multiple Choice Single-Select
25		Table
26	Example Student Response Schools are providing courses and programs that focus on nutrition and the source and supply of food. Two of these courses are the Food Matters for Health Professionals course at the University of Minnesota, and the Edible Schoolyard (ESY) program at the Martin Luther King, Jr. Middle School in California. While both of these programs encourage healthy eating and focus on culinary skills that provide good nutrition, there are two noticeable differences between the cooking course and ESY program. Firstly, the focus of the ESY program is mainly the growing and supply of food. They "plant their crops by hand." On the contrary, the college course is more so related to culinary skills, and applying those skills to create a purposeful dish in the sense of treating patients. Secondly, the cooking portion of the ESY program is simply for the sharing of the meals with each other, whereas in the college course, students are given a scenario in which they have a patient with certain health issues, and must create a dish that benefits them health-wise. Although they are different, they both promote health.	Written Response

ELA Grade 7 Practice Test Answer Key

Item Number	Correct Answer	Item Type
1	◉ The sentences are stage directions and are not to be read aloud.	Multiple Choice Single-Select
2	In line 9, Elizabeth recalls that Francis Marion is nicknamed "The Swamp Fox" because he tricks the British regularly. ▾	Drop Down
3	☐ "Mama, I see two men approaching the house." (line 2) ☑ "They're not wearing red coats." (line 4) ☐ "The honor is mine." (line 8) ☑ "I have heard it said that you are a great cavalry leader." (line 13) ☐ "I am surprised that you have heard of me." (line 14)	Multiple Choice Multiple-Select
4	◉ "And they are bursting into flames on contact!" (line 39)	Multiple Choice Single-Select
5		Table
6	◉ Newton is best known for his work as a scientist.	Multiple Choice Single-Select
7	In paragraph 3, the author explains that before 1662, counterfeiters were able to trick others into accepting their coins ▾ because pictures on real coins could be unclear. ▾	Drop-Down
8	◉ The engraving sent a message to counterfeiters.	Multiple Choice Single-Select
9	◉ As Master of the Mint, Isaac Newton played a significant role in fighting the common crime of counterfeiting.	Multiple Choice Single-Select

Item Number		Item Type
10		Multiple Choice Multiple-Select
11A		Multiple Choice Single-Select
11B		Select in Passage
12		Table
13		Multiple Choice Single-Select
14A		Multiple Choice Single-Select
14B		Text Entry
15		Drop-Down
16		Multiple Choice Single-Select
17		Multiple Choice Single-Select

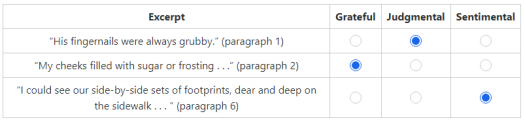
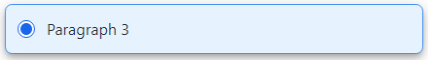
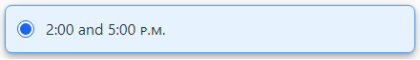
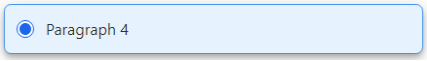
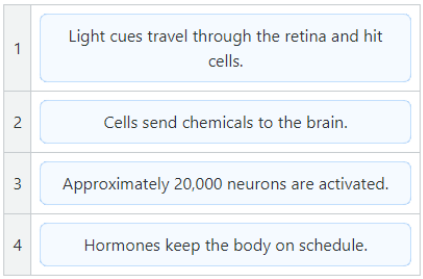
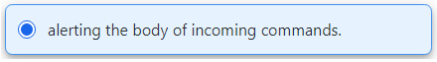
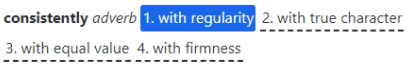
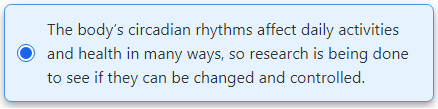
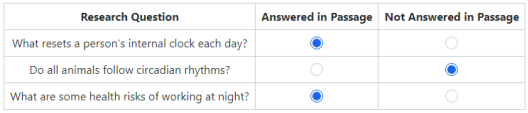
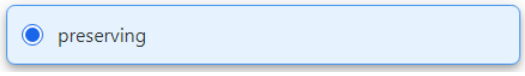
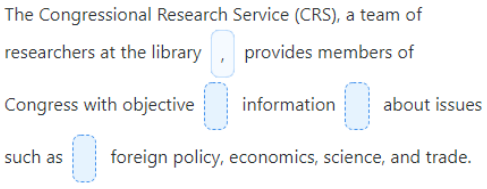
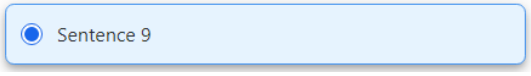
Item Number		Item Type
18	☐ The location outside the city of Cairo ☑ The animal imagery that suggests power and strength ☑ The presence of symbols associated with kings ☐ The number of pyramids at Giza ☐ The description of the monuments as well-known	Multiple Choice Multiple-Select
19	◉ Paragraph 2	Multiple Choice Single-Select
20	☑ The probable source of the azurite for the blue paint ☐ The birthplace of the kings Khufu and Khafre ☑ The region where the alabaster for the temple floor came from ☐ The location of the three best-known pyramids in the world ☐ The places associated with the sun gods in the west and east	Multiple Choice Multiple-Select
21	◉ "Around 220 B.C., Qin Shi Huang, the Qin dynasty's first emperor of a unified China, ordered that earlier fortifications between states be removed and a number of existing walls along the northern border be joined into a single system . . ." (paragraph 3)	Multiple Choice Single-Select
22	The Great Wall is considered both [a monumental accomplishment ▾] and a symbol of China's [enduring culture. ▾]	Drop-Down
23	◉ Although the successful invasion of the Manchus represented the failure of the Great Wall's original purpose, in the following years the Great Wall has become one of the most popular and celebrated monuments in the world.	Multiple Choice Single-Select
24		Table

Phrase	"Guardian on the Plateau"	"The Great Wall of China"	Both
Describes the spiritual meaning of the structure	◉	○	○
Explains where the materials used to build the structure came from	◉	○	○
Cites specific occurrences that have damaged the structure	○	◉	○
Provides reasons for the fame and popularity of the structure	○	○	◉

Item Number	Correct Answer	Item Type
25	The information presented in "Guardian on the Plateau" is **mainly** organized using description and elaboration, whereas the overall presentation of ideas in "The Great Wall of China" is organized by a chronological structure.	Drop-Down
26	Example Student Response The Shphinx and the Great Wall of China are two very well known structures today. They were both built a very long time ago. Each structure was built with different materials to support their purpose. Futhermore, the Great Wall of China was built as a defense mechanism. Because it was used to keep invaders out, they used earth and stone to keep it sturdy and have it hold up even during attacks. In contrast, the Sphinx was built as art. Because the Sphinx was just to look at, they carved it out of living rock, meaning they used the closest materials they had. They also used paint to make it so it was appealing the the Egyptians. This is very different from what they used to make the Great Wall of China because they served very different purposes. Each one was made of materials to benefit their needs. For example, they used stone for the Great Wall because it was meant to hold up during attacks and the Sphinx was just for art, which is why they just carved out of rock that was already there. In conclusion, materials are used based on their function.	Written Response

ELA Grade 8 Practice Test Answer Key

Item Number	Correct Answer	Item Type
1	◉ Both activities allow her a happy escape from her gloomy reality.	Multiple Choice Single-Select
2	In paragraph 4, the phrase **delivering me swiftly into the arms of the snowbank** indicates that the narrator wondered whether she would be [knocked forcefully ▾] into the pile of snow.	Drop-Down
3	☑ It helps the reader imagine how cold the air is. ☐ It explains that the narrator and Alex are imitating dragons. ☑ It contributes to the playful mood of the paragraph. ☐ It helps the reader hear the sounds that the characters are making. ☐ It demonstrates how quickly the characters are walking through the snow.	Multiple Choice Multiple-Select
4A	◉ remembers him fondly after he moves away.	Multiple Choice Single-Select
4B	◉ "I crossed out all my mistakes instead of erasing them, and my pencils were still dotted with teeth marks." (paragraph 9)	Multiple Choice Single-Select
5	☐ The narrator angrily storms out of the house. ☑ The narrator, saddened by recent events, struggles with loneliness. ☐ The narrator refuses to make new friends after Alex moves away. ☐ Alex, a boy from school, starts a snowball fight with the narrator. ☑ Alex provides the narrator with small moments of happiness before moving away.	Multiple Choice Multiple-Select

Item Number		Item Type
6		Table
7		Multiple Choice Single-Select
8A		Multiple Choice Single-Select
8B		Multiple Choice Single-Select
9		Drag and Drop
10		Multiple Choice Single-Select
11		Select in Passage
12		Multiple Choice Single-Select
13		Table
14		Multiple Choice Single-Select
15		Drag and Drop
16		Multiple Choice Single-Select

Item Number		Item Type
17A	◉ proceedures	Multiple Choice Single-Select
17B	procedures	Text Entry
18	◉ The balloons need to stay within a broadcasting range, but wind currents can move them off course.	Multiple Choice Single-Select
19	◉ Balloons used to transmit Internet signals may one day serve as an alternative connection source in areas where fiber lines and cell towers are unaffordable.	Multiple Choice Single-Select
20	Controlling the balloons is a massive computational challenge, DeVaul said. Fortunately, he added, "at Google we've got a bunch of really clever computer scientists and a lot of computing power. We now believe we can make the rest of this work, technically." Google, of course, has an interest in helping more people get on the Internet. The multibillion-dollar tech giant makes most of its money by showing ads to consumers who use Google's online services. But Project Loon is addressing "a very real problem" that affects the two-thirds of the world's population who are on the wrong side of the digital divide, said Richard Bennett. He is an expert on broadband networking at the Information Technology and Innovation Foundation. While the idea could work, Bennett said, it was still not clear who would pay for operating and maintaining the balloon network. Google has been vague about its plans. Bennett	Select in Passage
21A	◉ It allows energy to be stored longer.	Multiple Choice Single-Select
21B	◉ "The salt can stay hot for weeks and be used to produce steam as needed." (paragraph 13)	Multiple Choice Single-Select
22	1. Mirrors track the sun across the sky. 2. Sunlight is reflected onto the top of a tower. 3. Water is heated to boiling. 4. Steam turns turbines to produce electricity.	Drag and Drop

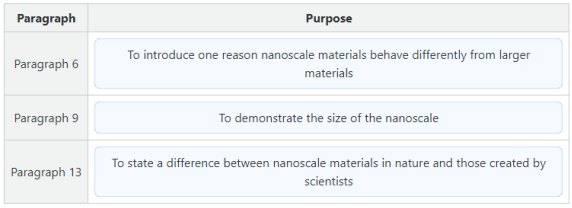
Item Number	Correct Answer	Item Type
23	According to the passage, California plans to reduce the burning of fossil fuels by obtaining one-third of its energy from renewable sources. ▾	Drop-Down
24	◉ Explaining the intended use of each of the technologies	Multiple Choice Single-Select
25	☑ Details about potential uncontrollable elements that could limit the effectiveness of the technologies ☐ Plans for raising the height of each technology to increase the amount of people served ☐ Environmental studies to protect ecological habitats from being negatively affected by the technologies ☑ Concerns about the high costs of developing the technologies ☐ Experimental tests of the respective technologies to look for potential improvements	Multiple Choice Multiple-Select
26	Example Student Response The claim that "The Google Loom project and the Ivanpah power plant rely on different aspects of the environment to make them work" is correct. The Ivanpah power plant uses the sun to focus the heat and light into a certain place to produce energy. The Google Loom uses the wind to move the balloons and keep them aligned. In Passage 2, the author does state that a scarcity in sunlight could negativily affect the amount of energy produced, limiting projects like this to the southwestern parts of the U.S. Passage 1 describes how wind patterns and weather affects the balloons movements, thus leading Google to come up with technology and ways to keep the balloons at a constant altitude and a percise location. The texts explicitly show the reliance of the two projects on the environment.	Written Response

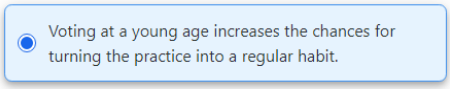
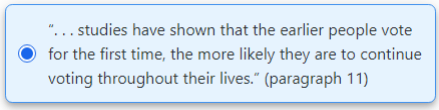
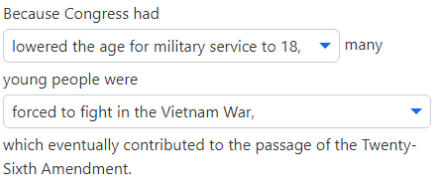
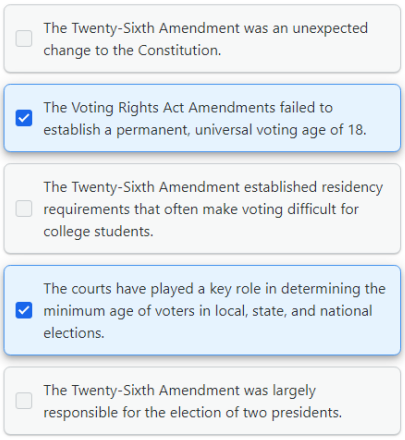
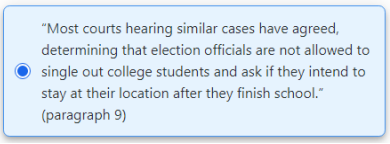
AK STAR
ALASKA SYSTEM OF ACADEMIC READINESS

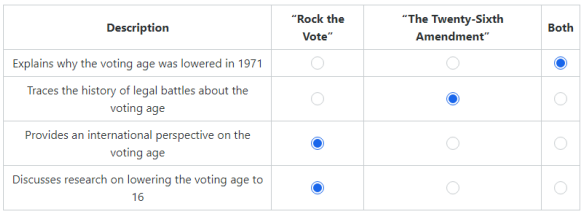
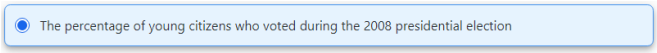
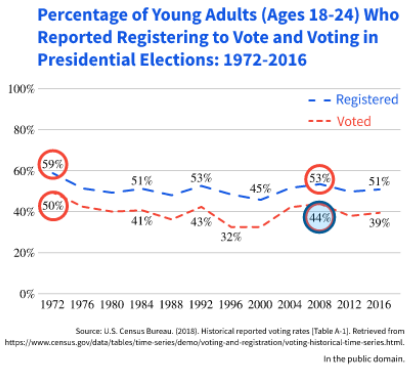
ELA Grade 9 Practice Test Answer Key

Item Number	Correct Answer	Item Type
1	◉ Carl and Alexandra once knew each other well but have been separated.	Multiple Choice Single-Select
2	◉ A discussion about her brothers reveals Alexandra as accepting of others but also independent.	Multiple Choice Single-Select
3A	"I think I liked the old Lou and Oscar better, and they probably feel the same about me. I even, if you can keep a secret,"—Carl leaned forward and touched her arm, smiling, —"I even think I liked the old country better. This is all very splendid in its way, but there was something about this country when it was a wild old beast that has haunted me all these years.	Select in Passage
3B	◉ It expresses a sentimental tone about the land.	Multiple Choice Single-Select
4	Paragraphs 14 through 18 primarily develop the plot by resolving Carl's anxiety about the past. ▾	Drop-Down
5	☐ "Carl had changed, Alexandra felt, much less than one might have expected." (paragraph 1) ☐ "'For years after that I was always squeezing and borrowing until I was ashamed to show my face in the banks.'" (paragraph 4) ☐ "'I'm cowardly about things that remind me of myself. It took courage to come at all, Alexandra.'" (paragraph 12) ☑ "'Alexandra, all the way out from New York I've been planning how I could deceive you and make you think me a very enviable fellow, and here I am telling you the truth the first night.'" (paragraph 14) ☑ "'You see . . . measured by your standards here, I'm a failure.'" (paragraph 15)	Multiple Choice Multiple-Select
6	◉ Being connected to others is an important part of life.	Multiple Choice Single-Select
7	◉ As a child in school, Johnson had an intense curiosity, excelled at math, and skipped several grades.	Multiple Choice Single-Select

Item Number		Item Type
8A	◉ analizing	Multiple Choice Single-Select
8B	analyzing	Text Entry
9	When NACA transformed into NASA (National Aeronautics and Space Administration) in 1958, she went to work on the space program as a "human computer," literally computing complex math equations essential to helping launch America's earliest human spaceflights.	Drop-Down
10	◉ Over her lifetime, Johnson helped to put a human into outer space, while also helping to change a culture that once rejected African American women in the scientific workforce.	Multiple Choice Single-Select
11A	◉ basic building blocks	Multiple Choice Single-Select
11C	Think atoms and molecules, and now you're there. You're down at the nanoscale, where scientists are learning about these fundamental components of matter and are putting them to use in beneficial ways.	Select in Passage
12	◉ The surface area becomes larger when an object is broken into smaller parts.	Multiple Choice Single-Select
13	Biomimicry is the design and production of materials and structures that are inspired by naturally occurring materials and processes. Nanoscale materials are common in nature. From the molecular machines that translate DNA into proteins to the structures that keep leaves clean and bacteria off insect wings, nature operates at the nanoscale. Our bodies use natural nanoscale materials, such as proteins and other molecules, to function. In fact, many important functions of living organisms take place at the nanoscale; the diameter of double-stranded DNA is just 2.5 nanometers. Researchers have copied the nanostructure of lotus leaves to create water-repellent surfaces. Today, these coatings are used to make stain-proof clothing and anti-icing coatings for airplane wings and wind turbines. Scientists are also creating antimicrobial surfaces that mimic the nanoscale structures on cicada wings.	Select in Passage
14A	◉ Working at the nanoscale is relevant across all sciences.	Composite - Member

Item Number	Correct Answer	Item Type
14B	◉ ". . . materials can have different properties at the nanoscale—some are better at conducting electricity or heat, some are stronger, some have different magnetic properties, and some reflect light better or change colors depending on their size." (paragraph 5)	Multiple Choice Single-Select
15		Drag and Drop
16	☐ The raw materials used in most forms of nanotechnology are found in the plant kingdom. ☑ The natural world contains solutions to many human design problems. ☐ Technology based on natural structures is less harmful to the environment than other technology. ☑ Many naturally occurring systems already operate on the nanoscale. ☐ Nature produces more adaptable structures than those produced by humans.	Multiple Choice Multiple-Select
17	☐ A blog post by a college biology student titled "How Nanotechnology Will Save Us: Lessons for the Future" ☑ A textbook chapter titled "Designing from Nature: How Engineers Find Inspiration in their Surroundings" ☑ An article from an architecture magazine called "Learning from Termites How to Create Buildings that Last" ☐ A story on the National Science Academies Web site titled "The Smaller the Better: How Surface Area Contributes to Nanotechnology" ☐ A study produced by the research lab at a medical school titled "Using Robots to Deliver Medicine—What Technology Exists and Where We Go from Here"	Multiple Choice Multiple-Select
18	◉ show that a historical precedent exists for lowering the voting age in the United States.	Multiple Choice Single-Select
19	◉ It shows that some states have encouraged young potential voters by allowing 17-year-olds to vote in primaries if they meet certain requirements.	Multiple Choice Single-Select

Item Number	Correct Answer	Item Type
20A		Multiple Choice Single-Select
20B		Multiple Choice Single-Select
21		Drop-Down
22		Multiple Choice Multiple-Select
23		Multiple Choice Single-Select
24	The 26th Amendment to the Constitution grants citizens who are "18 years of age or older" the right to vote. The Supreme Court case of Oregon v. Mitchell (1970) played an important role in the creation of this amendment. Originally, Americans had to be 21 years old to vote. However, during the Vietnam draft, Congress was forced to enact the Voting Rights Act of 1970, lowering the voting age to 18 for all elections (federal, state, and local). In Oregon v. Mitchell, the Supreme Court decided that "the Constitution authorized Congress to lower the voting age in federal elections but not in local or state elections." Therefore, Congress had to propose the 26th amendment to lower the voting age for	Written Response

Item Number		Item Type
	every election. This clearly indicates that this case played an important role in the creation of the 26th Amendment.	
25		Table
26A		Multiple Choice Single-Select
26B		Zone