

Practice Item Guide

Virginia Standards of Learning

Algebra I

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Pearson

Table of Contents

OVERVIEW	3
SYSTEM REQUIREMENTS FOR TESTNAV	4
TECHNOLOGY-ENHANCED ITEM (TEI) TYPES	5
Drag and Drop	5
Hot Spot.....	5
Bar Graph or Histogram	5
Fill-in-the-Blank.....	6
OPENING THE VIRGINIA SOL MATHEMATICS PRACTICE ITEMS	7
MATERIALS NEEDED FOR COMPLETING VIRGINIA SOL MATHEMATICS PRACTICE ITEMS	8
ONLINE TOOLS AVAILABLE ON THE VIRGINIA SOL MATH PRACTICE ITEMS	8
SPECIFIC DIRECTIONS FOR THE SOL ALGEBRA I PRACTICE ITEMS	9
Introduction	9
APPENDIX A	56
APPENDIX B	59

OVERVIEW

The practice items available in the Virginia SOL Algebra I practice tool provide examples of the new content and increased rigor represented by the 2009 SOL. Additionally, these items illustrate the new technology-enhanced item (TEI) types. These practice items do not cover all the Algebra I SOL and should not be used in place of review of the SOL test content.

This practice guide may be used by teachers or other adults to guide students through the practice items for Algebra I. While the use of this guide with the practice items is not required, it is strongly encouraged, as it will help ensure that students are familiar with the types of items that they may encounter while taking the Algebra I test. The directions in the guide will also lead students through practice with the online tools, and will familiarize students with how to navigate through the test, and how to use the Section Review screen within TestNav. Appendix B summarizes how student responses for TEI are indicated on the Section Review screen.

Prior to guiding students through the practice items, carefully read this practice item guide and review the practice items to become familiar with them. All directions that must be read aloud to the students are in **bold Arial font** so that they stand out from the rest of the text. All other text is for your information and should not be read to students. While these practice items will not be scored in TestNav, the correct answer for each question is provided as the item is reviewed in the guide, as well as in Appendix A.

The following Change Log indicates any updates to this document.

Change Log		
Version	Date	Description
V.1	03/21/2012	Original document posted.
V.2	04/19/2012	Screen shot for question 1 updated.
V.3	10/31/2012	Additional practice items added to existing set. Various changes throughout guide regarding how TEI appear on the Section Review screen. Updated directions and screen shots for exiting TestNav. Added Appendix B.

SYSTEM REQUIREMENTS FOR TESTNAV

The minimum hardware requirements for all workstations used to access TestNav are available at <http://www.pearsonlinetesting.com/TestNav/7/index.html>

TECHNOLOGY-ENHANCED ITEM (TEI) TYPES

There are four types of technology-enhanced items:

- drag and drop,
- hot spot (which includes number line and coordinate plane items),
- bar graph or histogram, and
- fill-in-the-blank.

A brief description of each technology-enhanced item (TEI) type is provided below. The SOL practice items for Algebra I will introduce three of the TEI types.

Drag and Drop

Drag and drop items contain draggers and bays.

- Draggers are the answer options that are moved to bays in response to the question.
- Bays are areas of an item where draggers will remain once moved there.

Drag and drop items require a student to respond by moving one or more draggers from one place on the screen into a bay(s) elsewhere on the screen.

The student will click on the dragger and keep the button down while moving the dragger to the desired location. Once the button is released, the dragger will be in the new location. Students can still move the dragger once it has been dropped into a bay.

Hot Spot

Hot spot items contain hot spot zones which represent student answer options.

- Hot spot zones are answer options which may be part of a graphic, art, numbers, or text, that are selected in response to a question.
- Unlike a traditional multiple-choice item where only one answer option is correct, hot spot items may require the student to select one or more hot spot zones (answer options) in order to correctly answer the item.
- Number line and coordinate plane items require students to respond by clicking on a number line or coordinate plane to plot one or more points. In these items, the points themselves are the hot spot zones. Only points plotted with the pointer tool within TestNav, the testing software used in Virginia, are scorable responses. Points plotted with the dot tool are not scorable responses.

The student selects a hot spot by clicking on it. In some hot spot items, there will be an indication on the screen, such as the zone being outlined in light blue, which confirms that the pointer is over a hot spot. After the hot spot is clicked, there will always be an indication that the zone has been selected as an answer, such as the hot spot being outlined in burnt orange, the hot spot being shaded, an asterisk being placed on the hot spot, or a red point being plotted on the number line or coordinate plane.

Bar Graph or Histogram

Bar graph or histogram items require students to graph data by indicating the height (if the bars are vertical) or length (if the bars are horizontal) of one or more bars or intervals. The bar height or length is graphed by clicking on a location within the graph or by dragging the bar to the desired location.

Fill-in-the-Blank

Fill-in-the-Blank items require students to input characters from the keyboard (numbers, letters, or symbols) to answer the question. For this item type, the student responds to a question by typing into a blank box provided in the item.

- Some response boxes may limit the characters that can be entered. For instance, if the response is expected to be numeric, the student will not be able to enter letters.
- Students should carefully follow directions in fill-in-the-blank items, such as providing an answer in simplest form, rounding a number as indicated, or using significant digits.

OPENING THE VIRGINIA SOL MATHEMATICS PRACTICE ITEMS

1. Go to the Virginia Department of Education website:
http://www.doe.virginia.gov/testing/sol/practice_items/index.shtml
2. Under the heading “Mathematics Practice Items” click on the Algebra I link. Since this is a web based application, the link will take you directly to the Algebra I practice items.

MATERIALS NEEDED FOR COMPLETING VIRGINIA SOL MATHEMATICS PRACTICE ITEMS

Scratch paper, pencil, and graphing calculator

ONLINE TOOLS AVAILABLE ON THE VIRGINIA SOL MATH PRACTICE ITEMS

The following tools can be accessed by clicking the appropriate icon on the toolbar at the top of the screen. These tools can be used to assist the test taker in finding answers, but only the pointer tool may be used to respond to questions.

Tool Icon	Description
	Pointer – Use the pointer to respond to questions.
	Eraser – Use the eraser to remove lines or highlights.
	Highlighter – Use the highlighter tool to highlight text or graphics.
	Eliminator – Use the eliminator tool on multiple-choice questions to mark choices you do not wish to consider.
	Pencil – Use the pencil tool to make marks on the test questions.
	Ruler – Use the ruler tool to measure something on screen.
	Straightedge – Use the straightedge tool to draw straight lines and underline text.
	Dot tool – Use the dot tool to plot dots on the screen.
	Exhibit – Click the exhibit icon to view the formula sheet.
	Help – Use the help tool to display information about a specific tool on the top toolbar.

SPECIFIC DIRECTIONS FOR THE SOL ALGEBRA I PRACTICE ITEMS

Introduction

After the practice items are launched, the first sample item will be displayed. Read the following instructions to the students.

SAY Today you will be working on Algebra I practice items for the SOL test. There are 35 questions that will show you some of the types of test items that will be administered as part of the new Algebra I mathematics assessment. Some questions are multiple-choice and others are technology-enhanced items. Technology-enhanced items require you to show your answer in another way, such as typing the answer in a box, completing a graph, or clicking and dragging the answer to a specific location.

Listen carefully as I read the directions for these practice items. I will guide you through each item one at a time. Please remember that the questions you see are practice questions. They will not be scored, but I will tell you the correct answer for each item.

Are there any questions before we start?

Pause to answer questions.

SAY *Next* and *Previous* buttons appear at the bottom of the screen for each question. Clicking *Next* takes you to the next question. Clicking *Previous* takes you back to the previous question. Notice that the question numbers are also located at the bottom of the screen. For example, the screen with Sample A reads “Sample.”



SAY At any time, you may click on the *Flag for Review* button () located at the bottom left of the screen. This should be used for any question that you want to review at a later time. We will practice using this button when we are working on the practice items.

Now let's look at the top of your screen.

Pause. The picture below is the toolbar students will see at the top of the screen.



SAY The tools you may use are in the toolbar at the top of the screen. We will practice with some of the tools as we work through the practice questions. If you forget what a tool does, you can click on the Help symbol () to read about the tool.

The Help tool has information about the tools. If you would like your students to explore the Help tool, you can have them do this at the end of the practice items, after they have been exposed to the tools while working these items.

Note that the exhibit window contains information only about the Commonwealth of Virginia copyright.

SAY Remember that the tools at the top of the screen are there to help you solve a problem, but only the pointer tool can be used to mark an answer to a question.

Let's look at the first item, Sample A.

The screenshot shows a digital math practice interface. At the top, there is a toolbar with various tools: a pointer, eraser, highlighter, red X, green checkmark, calculator, ruler, protractor, and a Help icon. The user's name 'John doe' and the text 'Algebra I Practice Items (2009 Math SOL)' are visible in the top right corner, along with an 'Exit' button. The main content area displays 'SAMPLE A' and the question 'What is the solution to $3(2x - 1) = 3$?'. Below the question are four multiple-choice options, each with a radio button: A $x = \frac{1}{3}$, B $x = \frac{2}{3}$, C $x = 1$, and D $x = 5$. At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, 'Sample Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

SAY For any of the practice items or items on the actual SOL test, you may use scratch paper and your calculator to solve for the answer. Read the question to yourself and select the correct answer by clicking the circle next to it.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY You should have selected C, $x = 1$.

Click *Next* at the bottom of the screen to go to the next sample item.

Pause while students go to the next sample item.

SAY Sample B has a gray directions banner under the toolbar that tells you how to answer the question. When a question has a directions banner, you should always read it before solving the problem. The directions banner says, “Type your answer in the box. Your answer must be in the form of a fraction in simplest form. Use “/” (the forward slash) for the fraction bar.”

Make sure students see the directions box at the top of the screen and understand the forward slash is used for the fraction bar.

The screenshot shows a digital math practice interface. At the top, there is a toolbar with various icons (arrow, eraser, highlighter, red X, green checkmark, calculator, pencil, eraser, help) and a user profile for "John doe" with an "Exit" button. Below the toolbar is a gray banner with the following text: "Directions: Type your answer in the box. Your answer must be in the form of a fraction in simplest form. Use \"/" for the fraction bar." The main content area displays "SAMPLE B" and the question: "What is the value of $\frac{3}{x+2}$ when $x = 4$?". Below the question, it says "Your answer must be in the form of a fraction in simplest form." and there is an empty rectangular input box. At the bottom of the interface, there is a navigation bar with a "Flag for Review" button, "Sample Section 1", a "Section Review" button, and "Previous" and "Next" buttons.

SAY This sample question is an example of a fill-in-the-blank technology-enhanced item.

After you find the solution, you will type your answer in the empty box on the screen using the keyboard. Remember, to be correct your answer must be a fraction in simplest form.

Pause while students find and enter the answer.

SAY Which answer did you type in the box?

Pause for replies.

SAY The correct answer is $\frac{1}{2}$. You should type *one forward slash two (1/2)* in the box.

Notice the correct answer does not need to be the same length as the box. Do you have any questions about how to enter your answer?

Answer all questions.

SAY Click *Next* at the bottom of the screen to go to the first practice item.

Pause while students go to the first practice item.

SAY Notice the bottom of your screen now says “Question 1 of 35.” Read the first question to yourself.

Pause while students read the question.

The screenshot shows a digital math practice interface. At the top, there is a toolbar with various icons for editing and navigation, including a red 'X' icon for the eliminator tool. The user's name 'John doe' and the title 'Algebra I Practice Items (2009 Math SOL)' are visible in the top right corner. The main content area displays a question: "When $x > 0$ and $y > 0$, which expression is equivalent to $\sqrt{180x^9y^{16}}$ in simplest form?" Below the question are four multiple-choice options: A $3x^3y^4\sqrt{20}$, B $3x^4y^8\sqrt{20x}$, C $6x^3y^4\sqrt{5}$, and D $6x^4y^8\sqrt{5x}$. Option B is selected. At the bottom of the interface, there is a navigation bar with buttons for "Flag for Review", "Section Review", "Previous", and "Next". The current question is identified as "Question 1 of 35" in "Section 1".

SAY Before you answer the question; let's practice using the eliminator tool. On a multiple-choice question, the eliminator tool will help you mark choices that you do not wish to consider. At the top of the toolbar, click on the button with the red . Selecting this tool will change your pointer to an arrow with a red X next to it. You can use this tool to eliminate as many choices as you want. To eliminate an answer, you can click the choices you believe are not correct. Practice by eliminating answer choice A. (Pause.)

The eliminator tool can only be used on multiple-choice questions, and not on technology-enhanced items.

SAY If you eliminate a choice and then change your mind, you can use the eraser tool



() on the toolbar to erase a red X. Click on the eraser tool and practice using it to remove the red X on answer choice A.

Pause while students practice using this tool.

SAY Click on the eraser tool icon to put it away. Now re-read question one, use the eliminator to narrow down your choices, and then click on your answer. When you are finished with the eliminator tool, you can click on the icon to put it away.

Pause while students work to eliminate choices and find the answer to the question.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is option D, $6x^4y^8\sqrt{5x}$.

Do you have any questions about the answer or the eliminator and eraser tools?

Answer all questions.

SAY Click *Next* at the bottom of the screen to go to question 2.

Pause.

SAY Read the question to yourself and select the correct answer.

Pause while students solve the problem and select an answer.

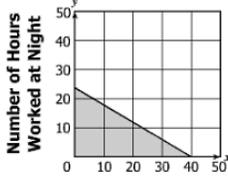
John doe
Algebra I Practice Items (2009 Math SOL) X Exit

Frank works at a convenience store.

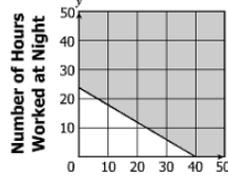
- He earns \$7.50 per hour when he works during the day.
- He earns \$12.50 per hour when he works at night.
- He wants to earn at least \$300 per week.

Which graph best represents this situation?

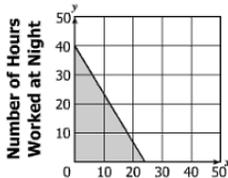
Frank's Weekly Earnings

A 

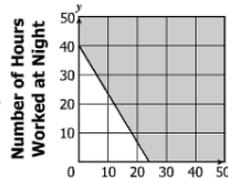
Frank's Weekly Earnings

C 

Frank's Weekly Earnings

B 

Frank's Weekly Earnings

D 

Flag for Review Question 2 of 35 Section 1 Section Review Previous Next

SAY What answer did you choose?

Pause for replies.

SAY You should have chosen C. Are there any questions?

Answer all questions.

SAY Before we go to the next question; let's take a moment to practice using the highlighter tool. You can use the highlighter tool on the toolbar to highlight words. To use this tool, click the icon that looks like a picture of a yellow highlighter



(). Clicking the highlighter tool will change your pointer tool to an arrow with a highlighter next to it.

Practice using the highlighter by highlighting the question, "Which graph best represents this situation?" Then click again on the highlighter tool on the toolbar to put the tool away.

Pause while students highlight the text and put the tool away. Assist students as necessary.

SAY Do you have any questions about how to highlight text?

Answer all questions.

SAY Click *Next* at the bottom of the screen to go to question 3. Read question 3 to yourself and then determine the answer.

Pause while students read the question and determine the answer.

The screenshot shows a digital math practice interface. At the top, there is a toolbar with icons for a mouse, eraser, highlighter, red X, green checkmark, calculator, ruler, compass, and a Help button. The user's name 'John doe' and the course 'Algebra I Practice Items (2009 Math SOL)' are displayed in the top right corner, along with an 'Exit' button. The main content area contains the following text:

A function f is described.

- $f(x) = (x - 2)^2 + 3$
- The domain of f is all real numbers greater than 0.

The range of f is all real numbers greater than or equal to —

Four radio button options are listed:

- A 2
- B 3
- C 5
- D 7

At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, 'Question 3 of 35 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is B, 3.

Are there any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to go to question 4.

Pause.

The screenshot shows a digital math practice interface. At the top, there is a toolbar with various icons for navigation and editing, including a mouse cursor, eraser, highlighter, and a 'Help' button. The user's name 'John doe' and the page title 'Algebra I Practice Items (2009 Math SOL)' are visible in the top right corner. The main content area contains the following text:

An experiment is conducted on a container of gas that is kept at a constant temperature.

- When the pressure on the gas is 30 pounds per square inch, the volume is 120 cubic inches.
- When the pressure on the gas is 40 pounds per square inch, the volume is 90 cubic inches.
- Let p represent the pressure on the gas.
- Let v represent the volume of the gas.

Which statement is true about this relationship?

- A The volume of the gas varies directly with the pressure because $v = 4p$.
- B The volume of the gas varies directly with the pressure because $vp = 3,600$.
- C The volume of the gas varies inversely with the pressure because $v = 4p$.
- D The volume of the gas varies inversely with the pressure because $vp = 3,600$.

At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, the text 'Question 4 of 35 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

SAY Read question 4 to yourself. Then take a moment to answer the question.

Pause while students answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY You should have selected D: The volume of the gas varies inversely with the pressure because $vp = 3,600$. Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

The data set shown has a mean of 37 and a standard deviation of 6.3, rounded to the nearest tenth.

$$\{ 26, 29, 32, 33, 35, 36, 37, 39, 40, 44, 45, 48 \}$$

How many of these data points have a z-score greater than -0.6 ?

A 3

B 5

C 8

D 9

SAY Read question 5 to yourself.

Pause while students read the question.

SAY For items where you may need a formula to solve the problem, you should refer to the exhibit tool located in the toolbar to find the formula sheet.

Let's take a moment to locate the formula sheet. Click on the exhibit tool () and the formula sheet will appear inside a window. You can resize the window by dragging the right corner of the window. You can use the scroll bar on the right side of the formula sheet window to view all of the formulas. After you write the formula you need on your scratch paper, click on the exhibit tool to put the formula sheet away.

SAY Now solve the problem and choose your answer.

Pause while students work to find the answer.

SAY Which answer did you choose?

Pause for replies.

SAY You should have selected C, 8. Do you have any questions about the answer?

Answer any questions.

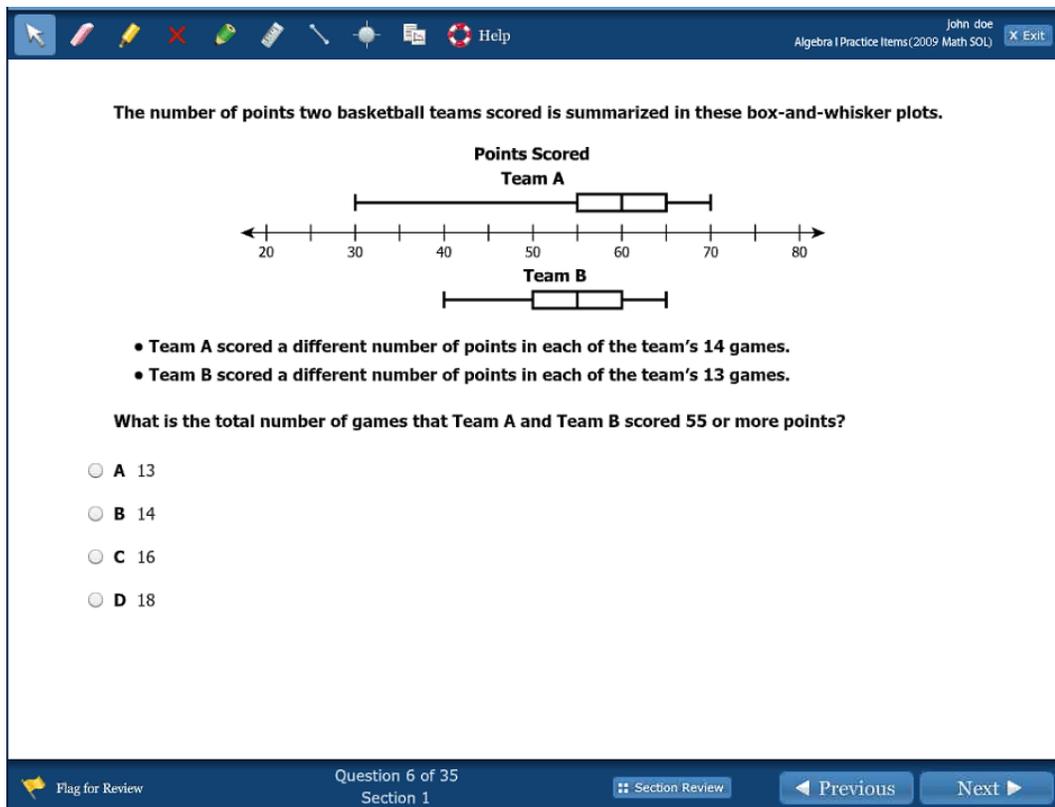
SAY Before we go to the next question, let's practice using the straightedge tool. You can use the straightedge tool on the toolbar to make a straight line or to underline text. Look for the straightedge tool icon () at the top of the screen. The icon is a line with points on either end. When you click on the straightedge tool, you will see a drop down box. Select Tool 2. Your pointer will now have an arrow with a slanted line next to it.

Practice using the straightedge by underlining “z-score greater than -0.6 .” Then click again on the straightedge tool on the toolbar to put the tool away.

Pause while students underline the text and put the tool away. Assist students as necessary.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.



The number of points two basketball teams scored is summarized in these box-and-whisker plots.

Points Scored

Team A

Team B

- Team A scored a different number of points in each of the team's 14 games.
- Team B scored a different number of points in each of the team's 13 games.

What is the total number of games that Team A and Team B scored 55 or more points?

A 13

B 14

C 16

D 18

Question 6 of 35
Section 1

Section Review

Previous Next

SAY Read question 6 to yourself and answer the question.

Pause while students read and answer the question.

SAY Which answer did you choose?

Pause for replies.

SAY You should have selected D, 18.

Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to go to question 7.

Pause.

SAY Question 7 is an example of a technology-enhanced item where there may be more than one answer.

The screenshot shows a digital testing interface. At the top, there is a toolbar with icons for navigation and help, and a user profile for 'John doe' with an 'Exit' button. Below the toolbar is a gray banner with the directions: 'Directions: Click on the box to choose each function you want to select. You must select all correct functions.' The main content area contains the question: 'Identify each function that has exactly one zero.' Below the question is a vertical list of five function boxes, each with a function equation: $f(x) = 9x^2 - 4$, $g(x) = 9(x - 8)$, $h(x) = x^2 + 4x + 8$, $j(x) = x^2 - 8x + 16$, and $k(x) = -2(x + 4)(x + 1)$. At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, 'Question 7 of 35 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

SAY The gray directions banner at the top of the screen says, “Click on the box to choose each function you want to select. You must select all correct functions.” The item says, “Identify each function that has exactly one zero.”

On the actual SOL test, you may see questions that require you to pick one or more answers. Some questions will tell you the number of correct answers to select. Other questions, like this one, will not give you the number of answers to select. You will have to decide how many correct answers there are.

Please make sure students understand this concept, as a traditional multiple-choice question only requires one answer.

SAY To answer the item correctly, you need to select all the correct answers by clicking on them. If you change your mind about an answer, you can click the answer choice and it will remove your selection, or you can use the eraser tool at the top of the screen to remove your selection. (Pause.)

Let’s begin this item together. Look at the first answer choice. Determine whether this function has exactly one root.

Pause while students analyze the function. The methodology the students use to look at the first option does not matter. The intent is for the students to determine that this is not a correct answer choice so that they may use the pencil tool to practice eliminating answers.

SAY You should have determined that this function has exactly two roots, and is therefore, not an answer. Let’s practice eliminating this answer with the pencil tool. Since this is a technology-enhanced item, we cannot use the eliminator tool.

Click the icon on the toolbar that looks like a green pencil (). Draw an “x” over the first answer choice.

SAY If you change your mind after eliminating an answer with the pencil tool, you can use the eraser tool to remove the “x”. (Pause.) Practice removing the “x.”

Now, answer the question, using the pencil tool to eliminate the choices that are not correct. When you are done with the pencil tool, click on the pencil icon again to put the tool away.

Pause while students answer the question.

SAY How did you answer the question?

Pause for replies.

SAY You should have selected two boxes: $g(x) = 9(x-8)$ and $j(x) = x^2 - 8x + 16$. You must have both of these functions selected, and only those two functions selected, to get the item correct.

When we are done looking at the practice items, we will look at a Section Review screen. The Section Review screen shows which questions you have answered and which questions you have not answered. Since the number of correct answers was not indicated in the question or directions, this item will show as “Answered” on the Section Review screen once one answer is selected. This is so no hint or clue is given as to how many correct answers there are, since it was not indicated in the question.

Do you have any questions?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Before we go on to the next question, click on the *Flag for Review* button on the bottom left of the screen. If this were an actual SOL test, you would click this button if you wanted to come back and review the question again.

Pause while students click on this icon.

SAY When we reach the end of the practice questions, I will show you how the questions you flag for review will look on the Section Review screen. The Section Review screen shows which questions you have answered and which questions you have not answered. The questions you *Flag for Review* will have a picture of a flag next to them.

Pause.

SAY Click *Next* at the bottom of the screen to go to question 8.

Pause.

SAY Question 8 is another technology-enhanced item where there may be more than one answer. Read the directions and the question to yourself and then answer the question. Use the pencil tool to eliminate answers.

John doe
Algebra I Practice Items (2009 Math SOL) X Exit

Directions: Click on the box to choose each function you want to select. You must select all correct functions.

Identify each function that has an x -intercept of 3.

$$f(x) = \frac{-4x + 15}{5}$$

$$g(x) = 3 - \frac{1}{2}x^2$$

$$h(x) = \frac{5}{3}x - 5$$

$$j(x) = (x + 3)(x - 5)$$

$$k(x) = 3x^2 - 11x + 6$$

Flag for Review Question 8 of 35 Section 1 Section Review Previous Next

Pause while students read and answer the question.

SAY Which functions did you select?

Pause for replies.

SAY You should have selected two functions: $h(x) = \frac{5}{3}x - 5$ and $k(x) = 3x^2 - 11x + 6$.

You must have selected both of these functions, and only these two functions, for the item to be correct.

SAY Since the number of correct answers was not indicated in the directions or question, this item will show as “Answered” on the Section Review screen once one answer is selected. This is so no hint or clue is given as to how many functions to select.

Do you have any questions?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to go to question 9.

Pause.

SAY Question 9 is a graphing technology-enhanced item for which there may be more than one answer. The gray directions banner at the top of the screen says, “Click on the grid to plot each solution. You must plot all solutions.”

To answer the item correctly, you will use your pointer tool to plot all the correct points by clicking on the correct locations on the grid. If you change your mind about a point, you can click the point again and it will remove your selection, or you can use the eraser tool at the top of the screen to remove your selection.

(Pause.)

Now read and answer the question.

Pause while students work to answer the question.

john doe
Algebra I Practice Items (2009 Math SOL) Exit

Directions: Click on the grid to plot each solution. You must plot all solutions.

The graph of $f(x) = x^2 + 4x - 5$ is shown.

Identify each solution to $f(x) = 0$.

Question 9 of 35
Section 1 Section Review Previous Next

SAY What are the coordinates for the points you plotted?

Pause for replies.

SAY You should have plotted the ordered pairs $(-5, 0)$ and $(1, 0)$. For this item to be correct, you must have plotted both of these points correctly and only these two points.

Since the number of answers is not indicated in the question or directions, and you have to decide how many correct answers there are, the Section Review screen will show the item as “Answered” once you plot one ordered pair. This is so no hint or clue is given as to how many correct answers there are.

Do you have any questions?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Before we go to the next question, let’s discuss the dot tool. Look at the toolbar at the top of the screen. Locate the dot tool () that is directly to the left of the exhibit window. You can use this tool to place dots on the screen if using this tool would help you work through a problem. However, it is very important to note that you cannot use the dot tool to indicate an answer to any item.

SAY If an item requires that a point or points be plotted on a number line or coordinate plane to answer a question, only the pointer tool can be used to plot the points. On the SOL test, points plotted with the dot tool will not be scored.

To show you how this works, please use the eraser tool to remove the points you selected a moment ago. (Pause.) Now, click on the dot tool in the toolbar, and then use the dot tool to place a dot on the grid at $(-5, 0)$ and $(1, 0)$. (Pause.) Notice that these dots are large blue and look different than the points you plotted earlier with the pointer tool. These large blue dots can never be used to indicate an answer. Now click on the dot tool again to put the tool away. (Pause.)

Let's move to the Section Review by clicking on the Section Review button at the bottom of your screen. (Pause.) Scroll down to question 9, which is the coordinate grid item we are discussing now. (Pause.) The screen should indicate that question 9 is "Unanswered," even though there are dots on the grid. If you make a mistake during an actual SOL test and use the dot tool to plot a point instead of using the pointer tool to indicate your answer, the Section Review screen will remind you to return to that item and answer it. During testing, the Examiner will not be able to assist or remind you about how the tools work, so it is important that you understand this before testing.

We will discuss the Section Review screen and how it works in more detail when we reach the end of the practice items. Now, click on question 9 in the left column of the Section review screen to return to that item. (Pause.)

Take a moment to use the eraser tool to remove the dots, and then use the pointer tool to plot the ordered pairs $(-5, 0)$ and $(1, 0)$.

Pause while students remove the dot and plot points with the pointer tool. Assist as necessary.

SAY To summarize, you must be very careful on the SOL test not to use the dot tool to answer a question. You must only use the pointer tool to answer the item. For a number line or coordinate plane item that requires you to plot a point or points to answer the question, if you plot points with the dot tool and not with the pointer tool, the item will show as "Unanswered" on the Section Review screen, as we have just seen.

Do you have any questions about the difference between correctly plotting you answer using the pointer tool and using the dot tool?

Answer all questions. Make sure that students understand that the dot tool cannot be used to answer a question. An item will show as unanswered on the Section Review screen if the student used the dot tool, rather than the pointer tool, to answer the question.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

SAY Question 10 is an example of a fill-in-the-blank item. The directions say, "Type an inequality in the box. Use the $<$ (less than symbol) and $>$ (greater than symbol) for the inequality sign."

Now read the question and find a solution. Enter your answer in the box.

Pause while students solve the problem and enter an answer.

Directions: Type an inequality in the box. Use the < and > for the inequality sign.

Solve for x :

$$6x - 11 - 13x < 7 - 5x$$

Question 10 of 35
Section 1

SAY How did you answer the question?

Pause for replies.

SAY You could have entered $x > -9$ or $-9 < x$. Either of these answers would be correct for this item.

Notice again the correct answer does not need to be the same length as the box.

Pause.

SAY Do you have any questions?

Answer all questions.

SAY For questions that are fill-in-the-blank, once any character is entered into the response box, the question will show as “Answered” on the Section Review screen. Do you have any questions about how to type your answer in the box?

Answer any questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Try entering other characters into the box, such as letters, spaces, or other symbols.

Pause while students try to enter other characters. In this item, they will not be able to enter any characters other than numbers, a negative sign, the $>$ and $<$ symbols, and an x (lower case).

SAY This box will only accept numbers, a negative sign, the less than or greater than symbol, and a lower case x . If a letter, number, or symbol does not appear in the answer box after you've tried it, then you cannot use that symbol in your answer.

You can use the backspace key on the keyboard to clear your answer or the delete key. To use the delete key, click in front of the numbers you want to clear; press "delete" to remove each number one at a time. Try clearing your answer and retyping it in the box.

Pause while students practice clearing their answer.

SAY Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question. (Pause.)

Read the directions banner and question 11 to yourself, then select an answer. Remember, you can use the pencil tool to eliminate choices on this technology-enhanced item.

Pause while students read and answer the question.

John doe
Algebra I Practice Items (2009 Math SOL) X Exit

Directions: Click on a box to choose the property you want to select.

Identify the property that justifies the work between Step 4 and Step 5.

Step 1: $-6 \leq -2x + 3$

Step 2: $-6 + (-3) \leq -2x + 3 + (-3)$

Step 3: $-9 \leq -2x + 0$

Step 4: $-9 \leq -2x$

Step 5: $\left(-\frac{1}{2}\right)(-9) \geq \left(-\frac{1}{2}\right)(-2x)$

Step 6: $\frac{9}{2} \geq 1x$

Step 7: $\frac{9}{2} \geq x$

Distributive Property	Commutative Property of Multiplication
Inverse Property of Multiplication	Identity Property of Multiplication
Multiplication Property of Inequality	Addition Property of Inequality

Flag for Review Question 11 of 35 Section 1 Section Review Previous Next

SAY Which property did you choose?

Pause for replies.

SAY You should have chosen “Multiplication Property of Inequality.”

In order for this question to show as “Answered” on the Section Review screen, one of the boxes must be selected. Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

SAY Question 12 is an example of a drag and drop technology-enhanced item. The directions banner says, “Click and drag the two selected inequalities to the box.” To answer the question, you will click on an inequality in the dark gray box and drag it to the empty box next to the brackets. The directions tell you to select two inequalities.

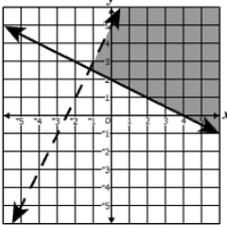
Now, read the question and create a system of inequalities that could be represented by the graph. If you change your mind after clicking and dragging an inequality to the box, you can drag the inequality back to the dark gray box and then select another inequality to drag into the box.

Pause while students create the system.

John doe
Algebra I Practice Items (2009 Math SOL) Exit

Directions: Click and drag the two selected inequalities to the box.

Using the inequalities shown, create a system of two inequalities that could be represented by this graph.



$y > -\frac{1}{2}x + 2$	$2x + 5 > y$
$y < -\frac{1}{2}x + 2$	$2x + 5 < y$
$y \geq -\frac{1}{2}x + 2$	$2x + 5 \geq y$
$y \leq -\frac{1}{2}x + 2$	$2x + 5 \leq y$

Question 12 of 35
Section 1

Section Review Previous Next

SAY Which inequalities did you choose?

Pause for replies.

SAY You should have selected $y \geq -\frac{1}{2}x + 2$ (the third box in the left column of the dark gray box) and $2x + 5 > y$ (the first box in the right column of the dark gray box). You must have selected both of these inequalities and only these inequalities for the item to be correct. For this question, the order in which you place them into the box does not matter.

For this question, if you only selected one inequality, the question would show as “Unanswered” on the Section Review screen, because the question tells you to select two inequalities. You must select two inequalities for this question to show as “Answered” on the Section Review screen.

Do you have any questions?

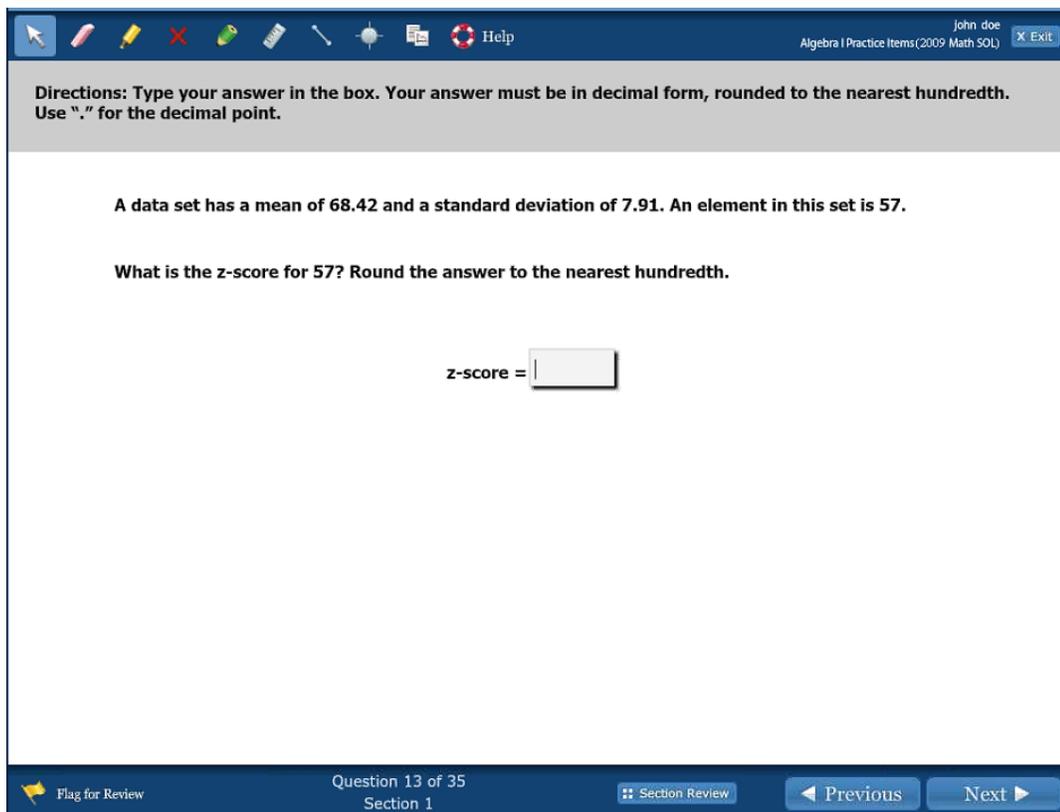
Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to go to question 13.

Pause.

SAY Read the directions banner and the question to yourself, then answer the question. Be sure to follow the directions you are given when entering your answer.



The screenshot shows a digital math practice interface. At the top, there is a toolbar with icons for a mouse cursor, eraser, highlighter, red X, green checkmark, calculator, and help. The user's name 'John doe' and the course 'Algebra I Practice Items (2009 Math SOL)' are displayed in the top right corner, along with an 'Exit' button. Below the toolbar is a grey banner with the following directions: 'Directions: Type your answer in the box. Your answer must be in decimal form, rounded to the nearest hundredth. Use "." for the decimal point.' The main content area contains the text: 'A data set has a mean of 68.42 and a standard deviation of 7.91. An element in this set is 57. What is the z-score for 57? Round the answer to the nearest hundredth.' Below this text is a label 'z-score =' followed by a rectangular input box. At the bottom of the interface, there is a dark blue navigation bar containing a 'Flag for Review' button, the text 'Question 13 of 35 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

Pause while students solve the problem and enter a response.

SAY How did you answer the question?

Pause for replies.

SAY You should have entered **-1.44**.

For questions that are fill-in-the-blank, once any character is entered into the response box, the question will show as “Answered” on the Section Review screen. Do you have any questions about how to type your answer in the box?

Answer any questions. The answer must be rounded to the nearest hundredth to be correct.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen.

Pause.

SAY Read the question to yourself and answer it. You may use any of the tools we have practiced, as well as your scratch paper and calculator, to find an answer to the question.

Pause while students solve the problem and select an answer.

The screenshot shows a math practice interface. At the top, there is a toolbar with various icons for navigation and editing. The main content area contains the following text and table:

This table shows data on the number of dollars raised during a fundraiser for four different classes and for one student in each class.

Number of Dollars Raised			
	Mean for Class	Standard Deviation for Class	Student's z-Score
Jill	60	11	1.8
Kelli	58	12	2.1
Monroe	55	13	1.4
Tim	57	10	2.5

Which of the four students raised the greatest number of dollars?

A Jill
 B Kelli
 C Monroe
 D Tim

At the bottom of the interface, there is a navigation bar with the following elements: "Flag for Review", "Question 14 of 35 Section 1", "Section Review", "Previous", and "Next".

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is B, Kelli.

Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to continue to the next question.

Pause.

SAY Read question 15 to yourself and find the answer.

Pause while students solve the problem and select an answer.

John doe
Algebra I Practice Items (2009 Math SOL) [Exit](#)

What is $\sqrt[3]{3,456}$ in simplest form?

A $2\sqrt[3]{12}$

B $6\sqrt[3]{16}$

C $12\sqrt[3]{2}$

D $24\sqrt[3]{6}$

Flag for Review Question 15 of 35 Section 1 [Section Review](#) [Previous](#) [Next](#)

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is C, $12\sqrt[3]{2}$. Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to go to question 16.

Pause.

SAY Question 16 is an example of a hot spot technology-enhanced item. The directions say, “Click on a bar to choose each interval you want to select. You must select all correct intervals.”

Now read the item.

Pause while students read the item.

SAY You may answer the question now. If you change your mind after selecting a bar, click on that bar again and it will remove your selection.

Pause while students answer the question.

John doe
Algebra I Practice Items (2009 Math SOL) X Exit

Directions: Click on a bar to choose each interval you want to select. You must select all correct intervals.

The data on the annual rainfall for 32 cities is summarized in this histogram.

- The mean amount of rainfall for these cities is 32.5 inches.
- The standard deviation of the data is 4 inches.

On the histogram, identify each interval that may have data points within 1.5 standard deviations of the mean.

Annual Rainfall of Cities

Annual Rainfall Interval (in.)	Number of Cities
24-26	1
26-28	3
28-30	3
30-32	5
32-34	7
34-36	6
36-38	4
38-40	2
40-42	1

Flag for Review Question 16 of 35 Section 1 Section Review Previous Next

SAY Which intervals did you select?

Pause for replies.

SAY You should have selected all of these intervals: 26-28, 28-30, 30-32, 32-34, 34-36, 36-38 and 38-40. You must have all of those intervals, and only those intervals, to be correct.

Since the number of correct answers was not indicated in the question, this item will show as “Answered” on the Section Review screen when one interval is selected. This is so no hint or clue is given as to how many correct intervals there are, since the directions indicate you must “select all.” Do you have any questions?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to go to question 17.

Pause.

SAY Read the directions and question 17 to yourself.

Pause while students read the question.

John doe
Algebra I Practice Items (2009 Math SOL) [X Exit](#)

Directions: Click on the grid to plot the three points you want to select. The coordinates of the points must be integers.

A function is represented by this rule.

One more than one-fourth the square of a number x is y .

Plot three points on the grid that are represented by this rule. Each point must have coordinates that are integers.

Question 17 of 35
Section 1

[Flag for Review](#) [Section Review](#) [Previous](#) [Next](#)

SAY Be sure to follow the directions given in the banner and enter three points. Also be sure to use the pointer tool, not the dot tool, to plot the points on the coordinate plane. Now find a solution and enter your answers.

Pause while students answer the question.

SAY What were the coordinates of the points you plotted?

Pause for replies.

SAY For this question, you must have plotted any three of the following ordered pairs: $(-6, 10)$, $(-4, 5)$, $(-2, 2)$, $(0, 1)$, $(2, 2)$, $(4, 5)$, or $(6, 10)$. Although there are infinite points that are located on the graph of this function, these are the only points with integral coordinates that can be graphed on the coordinate plane displayed in the problem.

Since the directions indicated that you must plot three points, this question will only show as “Answered” on the Section Review screen when three points are plotted. Do you have any questions?

Answer all questions.

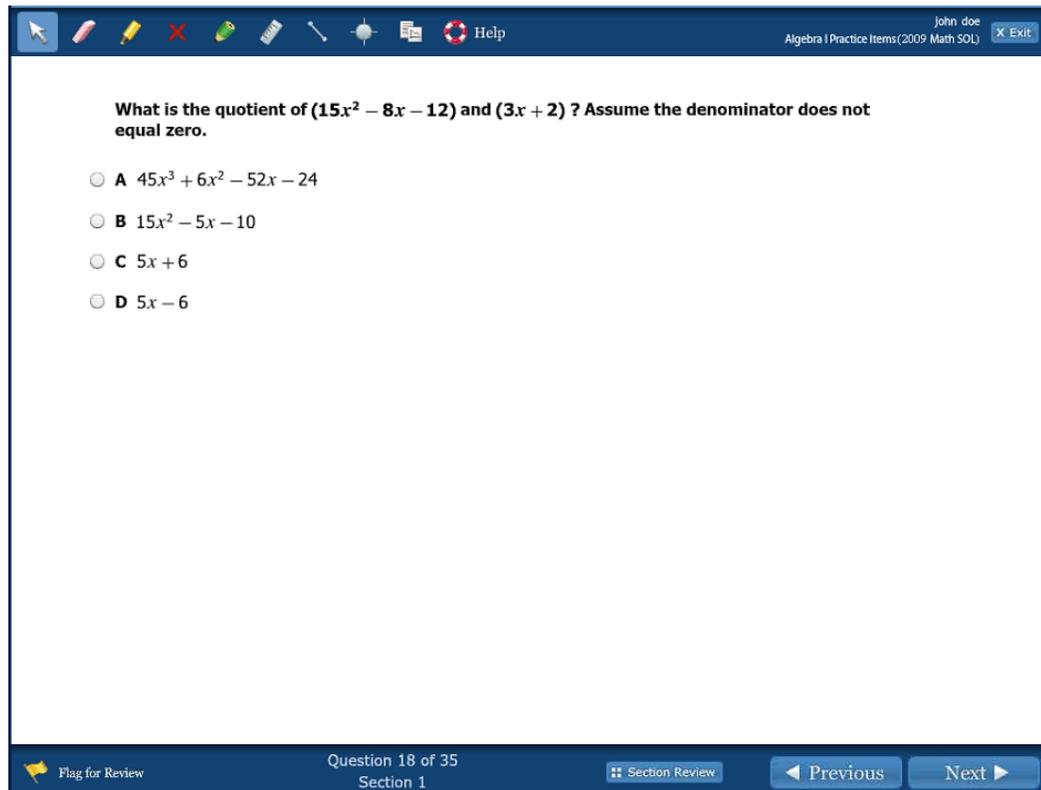
Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to go to question 18.

Pause.

SAY Read question 18 to yourself and answer the question.

Pause while students read the question.



The screenshot shows a digital math practice interface. At the top, there is a toolbar with icons for a mouse, eraser, highlighter, delete, calculator, and help. The user's name 'john doe' and the title 'Algebra I Practice Items(2009 Math SOL)' are visible in the top right corner. The main content area contains the following text: 'What is the quotient of $(15x^2 - 8x - 12)$ and $(3x + 2)$? Assume the denominator does not equal zero.' Below this are four multiple-choice options: A $45x^3 + 6x^2 - 52x - 24$, B $15x^2 - 5x - 10$, C $5x + 6$, and D $5x - 6$. At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, 'Question 18 of 35 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

SAY Which answer did you choose?

Pause while students read the question.

SAY The correct answer is D, $5x - 6$. Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to go to question 19.

Pause.

SAY Read question 19 to yourself and find the solution.

Pause while students read the question.

Which value can be placed under the radical symbol to make this statement true?

$$\sqrt[3]{\square} = 5\sqrt[3]{7}$$

A 35

B 245

C 875

D 1715

Question 19 of 35
Section 1

Section Review

Previous Next

SAY Which answer did you choose?

Pause while students read the question.

SAY The correct answer is C, 875. Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to go to question 20.

Pause.

SAY Be sure to follow the directions given in the banner as you enter your answer. Also, be sure to use the pointer tool, not the dot tool, to plot the points on the coordinate plane. Now find a solution and enter your answers.

John doe
Algebra I Practice Items (2009 Math SOL) X Exit

Directions: Click on the grid to plot two points. The coordinates of the points must be integers.

Point A is an element of a direct variation. Plot two points, other than A , that are also elements of this direct variation.

9
8
7
6
5
4
3
2
1
0

0 1 2 3 4 5 6 7 8 9

Flag for Review Question 20 of 35 Section 1 Section Review Previous Next

SAY What were the coordinates of the points you plotted?

Pause for replies.

SAY For this question, you must have plotted any two of the following pairs: $(0,0)$, $(4,6)$, $(6,9)$.

Since the directions indicated that you must plot two points, this question will only show as “Answered” on the Section Review screen when two points are plotted. Do you have any questions?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to go to question 21.

Pause.

SAY Be sure to follow the directions given in the banner as you enter your answer. Also, be sure to use the pointer tool to choose the region on the graph that needs to be shaded. Now find the solution.

Pause while students read the question.

John doe
Algebra I Practice Items (2009 Math SOL) X Exit

Directions: Click on the number that represents the region of the graph you want to select.

Zac began graphing the system of inequalities shown:

$$\begin{cases} y \geq \frac{2}{3}x + 1 \\ 5x + 6y \leq -30 \end{cases}$$

To complete the graph, Zac must shade the region which represents the solution set to the system of inequalities. What region of the graph needs to be shaded?

Flag for Review Question 21 of 35 Section 1 Section Review Previous Next

SAY Which answer did you choose?

Pause for replies.

SAY You should have shaded region 2 on the graph.

In order for this question to show as “Answered” on the Section Review screen, one region must be selected. Do you have any questions?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to go to question 22. Read the directions and question, then answer the question.

Pause.

Directions: Click on the statement you want to select.

Michelle correctly solved a linear equation and the last line of her work was: $1=2$

Which statement best describes the solution to the equation Michelle was solving?

- The only solution is 1.
- The only solution is 2.
- The solutions are both 1 and 2.
- The equation has infinitely many solutions.
- The equation has no solutions.

Flag for Review Question 22 of 35 Section Review Previous Next

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is *The equation has no solutions.*

Since the directions and question asked for one answer, this question will show as “Answered” on the Section Review screen once one answer is selected. Do you have any questions?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to go to question 23.

Pause.

SAY Read the directions and question 23 to yourself.

Pause while students read the question.

John doe
Algebra I Practice Items (2009 Math SOL) X Exit

Directions: Click on all numbers you want to select. Only select the correct numbers.

A set of data for the number of points a basketball team earned for each of 9 games in a tournament is shown. The mean for the data set is approximately 80.1 and the standard deviation is approximately 6.1. Using these approximations, which scores are within one standard deviation of the mean?

71, 73, 75, 78, 80, 82, 85, 87, 90

Flag for Review Question 23 of 35 Section 1 Section Review Previous Next

SAY Be sure to follow the directions given in the banner as you enter your answer. Now find the solution.

Pause while students find the solution.

SAY Which answers did you select?

Pause for replies.

SAY The correct answers are 75, 78, 80, 82, 85. You must have all of those numbers, and only those numbers, to be correct.

Since the number of correct answers was not indicated in the directions or question, this item will show as “Answered” on the Section Review screen once one answer is selected. This is so no hint or clue is given as to how many correct answers there are, since it was not indicated in the question. Do you have any questions?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to go to question 24.

Pause.

SAY Read question 24 to yourself and answer the question.

Pause while students read the question.

A relation is shown in this table.

x	y
1	10.00
4	2.50
8	1.25
20	0.50

Which statement about this relation is true?

- A It is a direct variation because $y = -2.5x + 12.5$
- B It is an inverse variation because $y = -2.5x + 12.5$
- C It is a direct variation because $10 = xy$
- D It is an inverse variation because $10 = xy$

Question 24 of 35
Section 1

Flag for Review Section Review Previous Next

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is *D*, *It is an inverse variation because $10 = xy$* . Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to go to question 25.

Pause.

SAY Read question 25 to yourself and answer the question.

Pause while students read the question.

In which table do the values represent the rule shown?

The square of the sum of x and 5 is equal to y .

A

x	y
3	28
4	29

B

x	y
3	14
4	21

C

x	y
3	64
4	81

D

x	y
3	34
4	41

Flag for Review Question 25 of 35 Section 1 Section Review Previous Next

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is C. Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to go to question 26.

Pause.

SAY Read question 26 to yourself and answer the question.

Pause while students read the question.

John doe
Algebra I Practice Items (2009 Math SOL) [X Exit](#)

What is the value of this expression when $a = 8$, $b = 16$, and $c = -4$?

$$5\sqrt[3]{a} - c\sqrt{b} + 9$$

A 30

B 35

C 50

D 51

Flag for Review Question 26 of 35 Section 1 [Section Review](#) [Previous](#) [Next](#)

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is **B, 35**. Do you have any questions?

Answer all questions.

SAY Click **Next** at the bottom of the screen to go to question 27.

Pause.

SAY Read question 27 to yourself and answer the question.

Pause while students read the question.

An inequality is shown.

$$-2(x + 50) \geq 16$$

Which inequality is true because of the division property of inequality?

A $\frac{-2(x + 50)}{-2} \geq \frac{16}{-2}$

B $\frac{-2(x + 50)}{-2} \leq \frac{16}{-2}$

C $\frac{-2(x + 50)}{-2} \geq 16$

D $\frac{-2(x + 50)}{-2} \leq 16$

Flag for Review Question 27 of 35 Section 1 Section Review Previous Next

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is B, $\frac{-2(x + 50)}{-2} \leq \frac{16}{-2}$. Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to go to question 28.

Pause.

SAY Read the directions and question 28 to yourself and answer the question.

Pause while students answer the question.

John doe
Algebra I Practice Items (2009 Math SOL) X Exit

Directions: Click on the boxes to choose the factors you want to select.

When factored completely, identify the factors of this polynomial.

$$9x^2 - 39x - 30$$

3	$3x - 15$	$3x - 2$	$x - 5$
9	$9x + 6$	$3x + 2$	$x + 5$

Flag for Review Question 28 of 35 Section 1 Section Review Previous Next

SAY Which answer did you choose?

Pause for replies.

SAY In order for your answer to be complete, you must have chosen the boxes that contain: 3, $3x + 2$, and $x - 5$.

Since the number of factors to select was not indicated in the question, this item will show as “Answered” on the Section Review screen once one factor is selected. Again, this is so no hint or clue is given as to how many factors you need to select.

Do you have any questions about the answer?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to go to question 29.

Pause.

SAY Read question 29 to yourself and answer the question.

Pause while students read the question.

The screenshot shows a digital math practice interface. At the top, there is a toolbar with icons for a mouse cursor, eraser, highlighter, red X, green checkmark, calculator, and a Help button. The user's name 'John doe' and the title 'Algebra I Practice Items (2009 Math SOL)' are visible in the top right corner, along with an 'Exit' button. The main content area contains the following text: 'The mean for a data set is 45. The z-score for data point a is 0. The z-score for data point b is 0.2. Which are the possible values for data points a and b ?' Below this text are four radio button options: A $a = 0$ and $b = 45.8$, B $a = 0$ and $b = 44.2$, C $a = 45$ and $b = 45.8$, and D $a = 45$ and $b = 44.2$. At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, 'Question 29 of 35 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is **C**, $a = 45$ and $b = 45.8$. Do you have any questions?

Answer all questions.

SAY Click **Next** at the bottom of the screen to go to question 30.

Pause.

SAY Read question 30 to yourself and answer the question.

Pause while students read the question.

John doe
Algebra I Practice Items (2009 Math SOL) X Exit

Statistical information for a data set is given.

- The mean of the data set is 30.
- The standard deviation for the data set is 3.
- The z-score for a data point in this set is 2.25.

In which interval is this data point?

A $18 \leq x < 24$

B $24 \leq x < 30$

C $30 \leq x < 36$

D $36 \leq x < 42$

Flag for Review Question 30 of 35 Section 1 Section Review Previous Next

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is D, $36 \leq x < 42$. Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to go to question 31.

Pause.

SAY Read question 31 to yourself and answer the question.

Pause while students read the question.

John doe
Algebra I Practice Items (2009 Math SOL) X Exit

Which represents this expression in simplest form?

$$\frac{15(x^{-2})^3}{3(x^{-4})^{-3}}$$

A $\frac{12}{x^6}$

B $12x^{18}$

C $\frac{5}{x^6}$

D $\frac{5}{x^{18}}$

Flag for Review Question 31 of 35 Section 1 Section Review Previous Next

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is D, $\frac{5}{x^{18}}$. Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to go to question 32.

Pause.

SAY Read question 32 to yourself and answer the question.

Pause while students read the question.

John Doe
Algebra I Practice Items (2009 Math SOL) X Exit

Using the quadratic curve of best fit, which equation most closely represents the set of data?

$$\{(-8, 80.4), (-7, 57.8), (-6, 38.6), (-5, 22.8), (3, 18.8), (5, 51.8), (7, 98.4)\}$$

A $y = x^2 + 2x - 5$

B $y = x^2 - 3x + 5.2$

C $y = 1.7x^2 - 3x + 5$

D $y = 1.7x^2 + 2.9x - 5.2$

Flag for Review Question 32 of 35 Section 1 Section Review Previous Next

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is D, $y = 1.7x^2 + 2.9x - 5.2$. Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to go to question 33.

Pause.

SAY Read question 33 to yourself and answer the question.

Pause while students read the question.

John doe
Algebra I Practice Items (2009 Math SOL) X Exit

A baker recorded the number of batches of cookies he made on each of seven days. He baked a different number of batches of cookies each day. This box-and-whisker plot summarizes his data.

The baker baked 20 batches of cookies on the eighth day. He redraws the box-and-whisker plot to include his data. Which statement comparing the new box-and-whisker plot to the original box-and-whisker plot is NOT true?

A The median increased.

B The lower extreme increased.

C The upper extreme increased.

D The value of the interquartile range increased.

Flag for Review Question 33 of 35 Section 1 Section Review Previous Next

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is B, The lower extreme increased. Do you have any questions?

Answer all questions.

SAY Click *Next* at the bottom of the screen to go to question 34.

Pause.

SAY Read the directions and question 34 to yourself and answer the question.

Be sure to plot two points, and make sure you are using the pointer tool to plot the points.

Pause while students answer the question.

John doe
Algebra I Practice Items (2009 Math SOL) X Exit

Directions: Click on the grid to plot two points. A line will extend through the two points. The coordinates of the points must be integers.

The function $f(x)$ is shown on this coordinate plane. Plot two points on this grid to create the graph of the line that represents $f(x) + 4$.

Flag for Review Question 34 of 35 Section 1 Section Review Previous Next

SAY Which ordered pairs did you plot on the coordinate plane?

Pause for replies.

SAY You should have plotted any two of the following ordered pairs $(-10, -10)$, $(-8, -7)$, $(-6, -4)$, $(-4, -1)$, $(-2, 2)$, $(0, 5)$, or $(2, 8)$.

Since the directions and question indicated you must plot two points, this question will not show as “Answered” on the Section Review screen until you completely answer the question and plot two points. Do you have any questions?

Answer all questions.

Please note that additional information regarding the requirements for an item to appear as “Answered” on the Section Review screen within TestNav is located in Appendix B for reference.

SAY Click *Next* at the bottom of the screen to go to question 35.

Pause.

SAY Read question 35 to yourself and answer the question.

Pause while students read the question.

The screenshot shows a digital math practice interface. At the top, there is a dark blue header bar with various icons (arrow, eraser, pencil, highlighter, red X, green checkmark, calculator, ruler, compass, eraser, help) and the text "John doe" and "Algebra I Practice Items (2009 Math SOL)" with an "X Exit" button. The main content area is white and contains the question: "What are the solutions to the equation $2x^2 + 5x + 3 = 0$?". Below the question are four multiple-choice options, each with a radio button: A $x = 0.5$ and $x = -3$; B $x = -1$ and $x = 6$; C $x = -1$ and $x = -1.5$; D $x = 1$ and $x = 5$. At the bottom, there is a dark blue footer bar with a "Flag for Review" button, the text "Question 35 of 35 Section 1", a "Section Review" button, and "Previous" and "Next" navigation buttons.

SAY Which answer did you choose?

Pause for replies.

SAY The correct answer is C, $x = -1$ and $x = -1.5$. Do you have any questions?

Answer all questions. The student may choose to solve this by factoring, graphing, or by using the quadratic formula.

SAY Click *Next* at the bottom of the screen to go to Section Review screen.

Section 1 Review Return to Test X

Choose an item below or click *CONTINUE* to go to the Test Overview.

All Items	1 Flagged for Review	37 Answered	0 Unanswered
Sample		✓ Answered	
Sample		✓ Answered	
Question 1		✓ Answered	
Question 2		✓ Answered	
Question 3		✓ Answered	
Question 4		✓ Answered	
Question 5		✓ Answered	
Question 6		✓ Answered	
Question 7	🚩 Flagged for Review	✓ Answered	
Question 8		✓ Answered	
Question 9		✓ Answered	
Question 10		✓ Answered	

CONTINUE TO TEST OVERVIEW ▶

john doe | Algebra I Practice Items (2009 Math SOL)

SAY The Section Review screen shows which questions have been answered, which questions have not been answered and which questions you have flagged for review. To return to a question, click on the question number.

Practice returning to a question by clicking on question #7, the question we flagged for review. You should see a picture of a flag in the “Flagged for Review” column next to the question. (Pause.) You can then return to this screen by clicking on the “Section Review” button at the bottom of the screen on question #7.

Pause while students practice returning to question #7 and then come back to this screen.

The ruler tool was not used as students worked through the practice items. If you would like students to practice with the ruler, have them return to question 11 and measure the height of the dark gray box using either the inches or centimeters ruler. The box has a height of 4.5 centimeters,

or $2\frac{7}{8}$ inches.

SAY You can also use the Section Review screen to sort the questions. The top row of the Section Review screen tells you how many questions you have flagged for review, answered, or left unanswered. If you want to view only the questions you Flagged for Review, simply click on the column header that says “Flagged for Review.” If you want to view only questions you have answered, click the “Answered” header. If you want to view only questions you left unanswered, click on the light blue box header that says “Unanswered.” Move your pointer over each column heading and notice how that section of the heading changes.

Pause while students practice sorting the columns.

SAY If the Section Review screen indicates that a question is unanswered, you have not answered a question completely. If this happens, it is a good idea to return to the question, and read the directions and the question again before making any changes to your answer.

Are there any questions?

Students should check any questions that show as “Unanswered” on the Section Review screen. When the student returns to the question he or she may see that there is an answer, but it may be incomplete. It is important to note, however, that some questions will show as answered once a student responds with a single answer. This is necessary at times to avoid hinting or cluing an answer. For example, hot spot items that require students to “Select All” fall into this category. Please see Appendix B for detailed information.

SAY To get back to the Section Review screen that lists all questions, click the top left-hand column header titled “_ of 37 Total Items”.

The number in the blank will vary, depending on the last column the student has filtered on. The total number of items is 37: two sample items plus the thirty-five practice items.

SAY We are going to review two more screens. Click on the “Continue to Test Overview” button on the lower left corner of the screen. (Pause.)

Algebra I Practice Items (2009 Math SOL)

Choose a section below or click *SUBMIT* to submit and exit the test.

SECTIONS	STATUS	QUESTIONS
Section 1	Opened	1-35

SUBMIT AND EXIT TEST

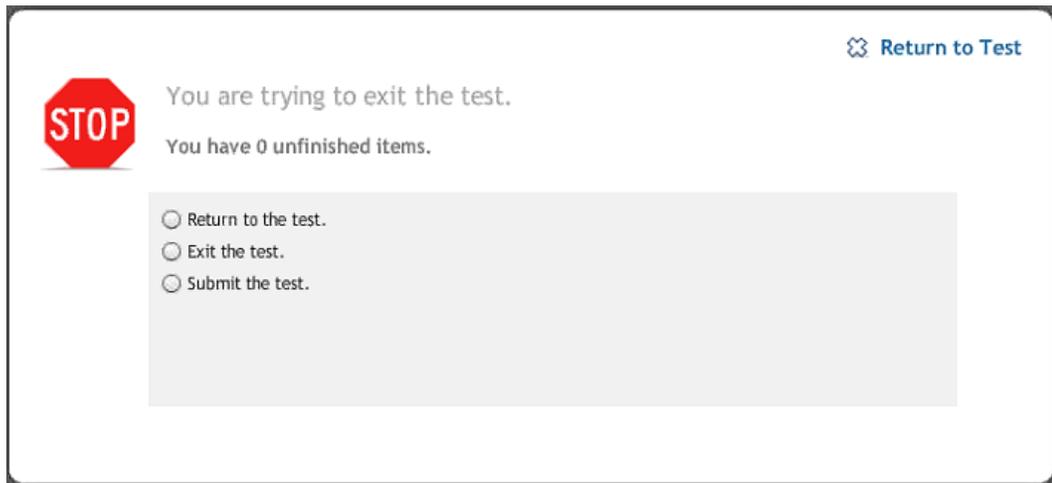
john doe

SAY From the Test Overview screen, you can return to the test or move to the final screen. Clicking on Section 1 will take you to the last practice item you were working on or went back to review. Since we have finished with the practice items, we will not return to any question within the section. Clicking on the “Submit and Exit Test” button at the bottom of the screen will move you to the final screen. Are there any questions?

Pause to answer all questions.

SAY Now click on “Submit and Exit Test.” (Pause.)

You will see a stop sign with three choices. It is important to review these three choices. (Pause.)



SAY Notice this screen indicates the number of unfinished items you have on the test.

The first choice states, “*Return to the test.*” This option allows you to go back to the practice questions. You would click this option if you wanted to return to any of the questions. Selecting this would first take you to the screen we just reviewed, and then you would click on Section 1 to return to the practice items.

The second choice states, “*Exit the test.*” This option should NOT be chosen. This option may be used during actual SOL testing, but should NOT be used for this practice set. **If you click on this option, you will lose all of your work. It will not be saved.**

Pause and make sure students understand not to choose option 2. During actual SOL testing, students may be directed to choose this option if they are being moved to a different location to complete their tests or if they need to leave the testing environment (while monitored) for a short time.

SAY The third choice, “*Submit the test,*” allows you to submit your answers.

Once you have finished using these practice items, proceed with exiting the application.

SAY Since we have finished with the practice items, please click on the third option, “*Submit the test.*” Next, click on the green button that says “*Final submit.*” When you click this button during actual SOL testing, your test will be submitted for scoring and you will not be able to return to the test.

This completes our review of the End-of-Course Algebra I SOL Practice Items.

Thank you for reviewing the Algebra I Practice Items with your students.

APPENDIX A**Answers to Algebra I Practice Items****Sample A**

The correct answer is C, $x = 1$.

Sample B

The correct answer is $\frac{1}{2}$.

Question 1

The correct answer is D, $6x^4y^8\sqrt{5x}$

Question 2

The correct answer is C.

Question 3

The correct answer is B, 3.

Question 4

The correct answer is D: The volume of the gas varies inversely with the pressure because $vp = 3,600$.

Question 5

The correct answer is C, 8.

Question 6

The correct answer is D, 18.

Question 7

The two correct functions are: $g(x) = 9(x-8)$ and $j(x) = x^2 - 8x + 16$. Both of these functions must be selected, and only these two functions, for the item to be correct.

Question 8

The two correct functions are: $h(x) = \frac{5}{3}x - 5$ and $k(x) = 3x^2 - 11x + 6$. Both of these functions must be selected, and only these two functions, for the item to be correct.

Question 9

$(-5, 0)$ and $(1, 0)$

Question 10

$x > -9$ or $-9 < x$

Question 11

Multiplication Property of Inequality

APPENDIX A (Continued)

Answers to Algebra I Practice Items

Question 12

Correct inequalities are: $y \geq -\frac{1}{2}x + 2$ (the third box in the left column of the dark gray box) and $2x + 5 > y$ (the first box in the right column of the dark gray box).

Question 13

The correct answer is -1.44 .

Question 14

The correct answer is B, Kelli.

Question 15

The correct answer is C, $12\sqrt[3]{2}$.

Question 16

All of these intervals, and only these intervals, must be selected: 26-28, 28-30, 30-32, 32-34, 34-36, 36-38 and 38-40.

Question 17

Any combination of three of the following points would be correct: $(-6, 10)$, $(-4, 5)$, $(-2, 2)$, $(0, 1)$, $(2, 2)$, $(4, 5)$, $(6, 10)$.

Question 18

The correct answer is D, $5x - 6$.

Question 19

The correct answer is C, 875.

Question 20

Two of the following pairs: $(0,0)$, $(4,6)$, $(6,9)$

Question 21

Region 2 on the graph should be shaded.

Question 22

The correct answer is: The equation has no solutions.

Question 23

The correct answer is 75, 78, 80, 82, 85.

Question 24

The correct answer is D, *It is an inverse variation because $10 = xy$.*

Question 25

The correct answer is C.

Question 26

The correct answer is B, 35.

APPENDIX A (Continued)

Answers to Algebra I Practice Items

Question 27

The correct answer is B. $\frac{-2(x+50)}{-2} \leq \frac{16}{-2}$.

Question 28

The correct answers are 3, $3x + 2$, and $x - 5$.

Question 29

The correct answer is C, $a = 45$ and $b = 45.8$.

Question 30

The correct answer is D, $36 \leq x < 42$.

Question 31

The correct answer is D, $\frac{5}{x^{18}}$.

Question 32

The correct answer is D, $y = 1.7x^2 + 2.9x - 5.2$.

Question 33

The correct answer is B, The lower extreme increased.

Question 34

The correct answer is any two of the following ordered pairs $(-10, -10)$, $(-8, -7)$, $(-6, -4)$, $(-4, -1)$, $(-2, 2)$, $(0, 5)$, or $(2, 8)$.

Question 35

The correct answer is C, $x = -1$ and $x = -1.5$

APPENDIX B

An overview of how student responses to technology-enhanced items will appear on the Section Review screen is outlined below:

Fill-in-the-blank (FIB) Items

For all fill-in-the-blank items, when a student enters any character into the response box, the item will show as answered on the Section Review screen. If a student enters an answer, and then completely erases that answer from the fill-in-the-blank box, the item will show as unanswered on the Section Review screen.

Histogram or Bar Graphing Items

For all histogram or bar graphing items, when a student raises any bar, the item will show as answered on the Section Review screen. If the student moves all bars back down to the original heights, the item will show as unanswered on the Section Review screen.

Hot Spot Items

When the number of correct responses is indicated in the directions or in the item itself, the item will show as answered on the Section Review screen only when the student selects that number of hot spots. For example, if the student is directed to select three answers, then the Section Review screen will show unanswered if the student selects one or two answers and will only show as answered once the student has selected three answers. If the number of correct responses is not indicated in the directions or in the question itself, then the item will show as answered on the Section Review screen once the student selects one answer. For example, if the student is required to “Select all correct answers,” the item will show as answered once the student selects one answer option. In this case, it is assumed that the student thought there was only one correct answer. This practice avoids providing information as to how many correct answers there are in the “select all” hot spot items.

Number Line or Coordinate Plane Items

Many number line or coordinate plane items require the student to plot one or more points as the response. When the number of points necessary to answer the item is indicated in the directions or the item itself, the item will show as answered on the Section Review screen only when the specified number of points has been plotted. When the directions or the item do not specify the number of points to plot, the item will show as answered on the Section Review screen once the student plots one point. Only points that have been plotted with the pointer tool are scorable responses. Points plotted with the dot tool are not scorable responses. If a student answers a question with the dot tool, the question will show as unanswered on the Section Review screen.

APPENDIX B (continued)

Drag and Drop Items

Drag and drop items contain answer receptacles called “bays” and “dragers” that the student moves into the bays to answer the question. There are many types of drag and drop items, and each item is evaluated individually so that the student is given the most detailed information possible on the Section Review screen, without providing hints as to the correct answer. For items with a specified number of bays, the item will show as answered on the Section Review screen once the student uses that number of dragers. For example, if there are three bays and it is intended for a dragger to be placed into each bay, then the Section Review screen will show the item as answered once three dragers have been input by the student. Or, in another example, if the directions or question indicate that all dragers need to be used to answer the item, then the item will show as answered on the Section Review only when all dragers have been used. If the number of dragers necessary to answer the question is not indicated, such as an item that requires the use of a dragger to complete a model or pictograph, then the Section Review Screen will show the item as answered once the student places one dragger in a bay.