

# Practice Item Guide

## Virginia Standards of Learning

### Grade 7 Mathematics

**These practice items are meant to provide students practice with the content and types of questions that can appear on the Grade 7 Mathematics Standards of Learning (SOL) test. Students can also use these items to practice with the online tools available within TestNav™.**

**It is important to note that the navigation through the practice items does not replicate the navigation through the online Grade 7 Mathematics Computer Adaptive Test (CAT). Practice with the navigation through a computer adaptive test (CAT) is available in a [Mathematics CAT Training Test](#) provided on the Virginia Department of Education Web site.**

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## OVERVIEW

The practice items available for the Virginia Standards of Learning (SOL) Grade 7 Mathematics test provide examples of the new content and increased rigor represented by the 2009 *Mathematics Standards of Learning*. Additionally, these items illustrate the technology-enhanced item (TEI) types. These practice items do not cover all grade 7 mathematics 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 grade 7 mathematics. 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 grade 7 mathematics test.

The directions in the guide will also lead students through practice with the online tools. **However, it is important to note that the navigation through these practice items does not replicate the navigation through the online version of the Computer Adaptive Test (CAT) being administered to students beginning with the fall 2015 test administration.** Practice with the navigation through a CAT is available in a [Mathematics CAT Training Test](#) provided on the Virginia Department of Education Web site.

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.

The following Change Log indicates any updates to this document.

Change Log		
Version	Date	Description
V.1	03/05/2012	Original document posted.
V.2	10/31/2012	Various changes throughout the guide regarding how TEI appear on the section review screen. Updated directions and screen shots for exiting TestNav. Added Appendix B.
V.3	03/15/2013	Overview amended; 20 new practice items added.
V.4	03/26/2013	Amended answer to question #12 in guide and Appendix A.
V.5	06/03/2014	Updated screen shot for question #21.
V.6	09/03/2015	Updated guide due to implementation of Computer Adaptive Testing for Grade 7 Mathematics, including removal of information about the Flag for Review Button, the Section Review Screens, closing screens, and the amendment of Appendix B.

## **SYSTEM REQUIREMENTS FOR TESTNAV**

The minimum hardware requirements for all workstations used to access TestNav are available at <http://www.pearsononlinetesting.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 grade 7 mathematics will introduce each of the TEI types: drag and drop, hot spot, bar graph, and fill-in-the-blank.

### 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.

Drag and drop items may be used in reading, writing, mathematics, and science assessments.

### 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 answer the item correctly.
- 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 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 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.

Hot spot items may be used in reading, writing, mathematics, and science assessments.

## 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.

Bar graph and histogram items may be used in mathematics and science assessments.

## 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.
- Currently, no fill-in-the-blank item requires students to correctly spell a word; however, alphabetic characters or symbols may be used in an answer.

Fill-in-the-blank items are currently used in mathematics and science assessments.

## **OPENING THE VIRGINIA SOL MATHEMATICS PRACTICE ITEMS**

1. Go to the Virginia Department of Education Web site:  
[http://www.doe.virginia.gov/testing/sol/practice\\_items/index.shtml](http://www.doe.virginia.gov/testing/sol/practice_items/index.shtml)
2. Under the heading “Mathematics Practice Items” click on the grade 7 link. Since this is a web based application, the link will take you directly to the grade 7 mathematics practice items.

## MATERIALS NEEDED FOR COMPLETING THE VIRGINIA SOL PRACTICE ITEMS

Grade 7 Mathematics: Scientific calculator, scratch paper and pencil

## ONLINE TOOLS AVAILABLE ON THE VIRGINIA SOL MATHEMATICS 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, and only the pointer can be used to respond to the questions.

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

## SPECIFIC DIRECTIONS FOR THE SOL GRADE 7 MATHEMATICS PRACTICE ITEMS

### Introduction

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

**SAY** Today you will be working on some grade 7 mathematics practice items for the SOL test. There are 31 questions that will show you some of the types of test items that will be administered as part of the grade 7 mathematics assessments. Some questions are multiple-choice and others are technology-enhanced items. Technology-enhanced items may require you 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. I will guide you through each item one at a time. Please remember these questions are for practice. They will not be graded, and I will tell you the answer for each question.

Do you have any questions before we start?

Pause to answer questions.

**SAY** There are some navigation features within these practice items that will not be available when you take the actual Grade 7 Mathematics computer adaptive Standards of Learning (SOL) test. A computer adaptive test (CAT) provides a customized test for every student. When you are taking the CAT, the questions and problems presented to you will be based on how you answer the questions.

(Recommended.) We will be taking a practice CAT at another time so you can experience what the navigation through the actual SOL test will be like. Today we will be focusing on the content of the questions, the types of questions, and the online tools that are available to use.

The [Mathematics CAT Training Test](#) is comprised of previously released grade 6 mathematics test questions. It is recommended for use with grade 7 mathematics students so that they can practice navigating through a computer adaptive test prior to the actual test taking experience. Because of the limited number of grade 6 mathematics released items, the CAT training test has fewer questions than an actual SOL test. Therefore, the training test will not have the same degree of customization for different levels of achievement as the actual CAT will provide. The training test will not be scored.

The online tools available within these practice items are the same as those available in the online computer adaptive version of the test.

**SAY** Let's look at the bottom of the screen. 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** There is a *Flag for Review* button (  ) located at the bottom left of the screen. Please disregard this button as we will not be using it today.

It is really important for me to say again that these features are different than what you will experience when you take the actual computer adaptive test. In the CAT, you will NOT see a *Previous* button or a *Flag for Review* button. In the CAT, you will only be able to click on the *Next* button after you have answered the question on the screen.

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.

**SAY** One thing to remember is that the tools at the top of the screen are there to help you solve a problem. The only tool that can be used to mark an answer to a question is the pointer tool (  ).

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

The screenshot shows a digital interface for a math practice item. At the top, there is a dark blue header bar with various icons (arrow, eraser, pencil, highlighter, X, eraser, ruler, compass, calculator, help) and the text "John doe", "Grade 7 Practice Items (2009 Math SOL)", and an "Exit" button. The main content area is white and contains the following text:

**SAMPLE A**

**What is the solution to  $2x = 6$  ?**

**A**  $x = 3$

**B**  $x = 4$

**C**  $x = 8$

**D**  $x = 12$

At the bottom, there is a dark blue footer bar with a "Flag for Review" button, the text "Sample Section 1", a "Section Review" button, a "Previous" button, and a "Next" button.

**SAY** 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 **A**,  $x = 3$ .

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

Pause while students go to the next sample item.

The screenshot shows a digital math practice interface. At the top, there is a toolbar with various icons for navigation and editing, including a pointer, eraser, highlighter, and help. The user's name "John doe" and the page title "Grade 7 Practice Items (2009 Math SOL)" are visible in the top right corner. Below the toolbar, a gray banner contains the directions: "Directions: Type your answer in the box." The main content area displays "SAMPLE B" followed by the question: "Stephanie ran 3 miles in 30 minutes. At this rate, what is the total number of minutes it will take Stephanie to run 2 miles?" Below the question is a text input box with a vertical cursor and the word "minutes" to its right. At the bottom of the interface, there is a navigation bar with buttons for "Flag for Review", "Sample Section 1", "Section Review", "Previous", and "Next".

**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.”

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

You may use scratch paper to solve for the answer. Type your answer in the box on the screen using the keyboard. Make sure you are using the pointer tool, and then click inside the box before you type your answer.

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 20 minutes. You should type 20 in the box.

Do you have any questions about how to enter your answer?

Answer all questions.

**SAY** Notice that the answer you entered does not need to be the same length as the box. For questions that are fill-in-the-blank, once any character is entered into the response box and remains in the response box, the question will be considered answered. Do you have any questions about how to type your answer in the box?

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 31.”

On the computer adaptive test, the bottom of the screen will read, for example, “Question 1” rather than “Question 1 of xx.”

**SAY** Now, read question 1 to yourself, then answer the question.

Pause while students answer the question.

The screenshot shows a math test interface. At the top, there is a toolbar with various icons (arrow, eraser, pencil, highlighter, calculator, help) and a user name 'John doe' with an 'Exit' button. The main content area contains the question: "Which number sentence is represented by this model?". Below the question is a number line with tick marks at -21, -18, -15, -12, -9, -6, -3, and 0. Three arrows are drawn on the number line, each starting at 0 and ending at -6, representing the equation  $-3 \cdot 6 = -18$ . Below the number line are four multiple-choice options: A  $-3 \cdot 6 = -18$ , B  $-3 \cdot 6 = 18$ , C  $-3 \cdot (-6) = -18$ , and D  $3 \cdot (-6) = 18$ . At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, 'Question 1 of 31 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

**SAY** Which answer did you choose?

The correct answer is A,  $-3 \cdot 6 = -18$ . Make sure the circle next to choice A is selected as

**your answer. Do you have any questions about the answer?**

Answer all questions.

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

Pause.

**SAY Read question 2 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 navigation and assistance, including a cursor, eraser, highlighter, red X, green checkmark, calculator, ruler, protractor, and a 'Help' icon. The user's name 'John doe' and the text 'Grade 7 Practice Items (2009 Math SOL)' are visible in the top right corner, along with an 'Exit' button. The main content area displays a word problem: 'A rectangular prism had a volume of 198 cubic centimeters. The height of this prism was changed from 3 centimeters to 6 centimeters to create a new rectangular prism. The other dimensions stayed the same. What is the volume of this new prism?'. Below the question are four multiple-choice options: A 1,188 cm<sup>3</sup>, B 594 cm<sup>3</sup>, C 396 cm<sup>3</sup>, and D 201 cm<sup>3</sup>. At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, 'Question 2 of 31 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

**SAY This item requires you to find the volume of a rectangular prism. For items where you may need a formula to solve the problem, you should refer to the formula sheet located in the toolbar to help find your answer.**

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.

**Now, determine the answer and make your selection.**

Pause while students work to find the answer.

**SAY** Which answer did you choose?

Pause for replies.

**SAY** The correct answer is option C,  $396 \text{ cm}^3$ . Do you have any questions about the answer or how to use the formula sheet?

Answer all questions.

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

Read question 3 to yourself and then determine the answer. Before you select your answer with the pointer tool, we will practice with the eliminator tool.

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 various tools: a pointer, eraser, highlighter, red X, green checkmark, calculator, ruler, protractor, and a help icon. The user's name 'John doe' and 'Grade 7 Practice Items (2009 Math SOL)' are visible in the top right corner. The main area contains the question: 'If  $m = -2$  what is the value of  $\frac{7m}{4} - 2m - 3$ ?' Below the question are four radio button options: A -2.5, B -3.5, C -5.5, and D -10.5. At the bottom, there is a navigation bar with 'Flag for Review', 'Question 3 of 31 Section 1', 'Section Review', 'Previous', and 'Next' buttons.

**SAY** 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 X () . 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, click the choices you believe are not correct. Then click the eliminator tool again to put the tool away.

Wait for students to eliminate choices and put the tool away. 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, use the eraser tool () on the toolbar to erase a red X. Click on the eraser tool and practice using it to remove a red X.

Pause while students select an answer.

**SAY** Click on the eraser tool icon to put it away. Now click on your answer.

Pause while students select the answer.

**SAY** Which answer did you choose?

Pause for replies.

**SAY** The correct answer is A,  $-2.5$ .

**Do you have any questions about the answer or how to use the eliminator tool or eraser?**

Answer all questions.

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

**Read question 4 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 navigation and editing, including a pointer, eraser, highlighter, and a 'Help' button. The user's name 'John doe' and the page title 'Grade 7 Practice Items (2009 Math SOL)' are visible in the top right corner. The main content area contains the following text:

Rayleen has two sets of cards of identical size and shape with the colors given.

- Set A has 5 green cards and 2 yellow cards.
- Set B has 4 blue cards and 1 red card.

Rayleen will randomly select one card from each set. What is the probability she will select a yellow card and a blue card?

Four multiple-choice options are listed:

- A  $\frac{1}{10}$
- B  $\frac{8}{35}$
- C  $\frac{1}{4}$
- D  $\frac{1}{2}$

At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, the text 'Question 4 of 31 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

**SAY** The correct answer is B,  $\frac{8}{35}$ .

**Do you have 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 text. To

select this tool, click the icon that looks like a yellow highlighter (). Selecting 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, "What is the probability she will select a yellow card and a blue card?" Click again on the highlighter tool on the toolbar to put the tool away.

Pause while students practice using the highlighter tool.

**SAY** Do you have any questions about how to use the highlighter tool?

Answer all questions.

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

Pause.

**SAY** Read question 5 to yourself, then answer the question.

Pause while students read the question and select an answer.

The screenshot shows a digital math practice interface. At the top, there is a toolbar with various icons for editing and navigation, including a mouse cursor, eraser, highlighter, red X, green checkmark, ruler, protractor, compass, and a Help icon. The user's name "John doe" and the text "Grade 7 Practice Items (2009 Math SOL)" are visible in the top right corner. The main content area displays the following question: "Beatrice has 18 pencils. Beatrice has 2 more than 4 times the number of pencils Rick has. Exactly how many pencils does Rick have?". Below the question are four multiple-choice options: A 11 pencils, B 7 pencils, C 5 pencils, and D 4 pencils. At the bottom of the interface, there is a navigation bar with a "Flag for Review" button, the text "Question 5 of 31" and "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 D, 4 pencils.

**Do you have any questions?**

Answer all questions.

**SAY** Before we go to the next questions, 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. 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 the question, "Exactly how many pencils does Rick have?" Then click again on the straightedge tool on the toolbar and on "Tool 2" to put this tool away.

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

**SAY Do you have any questions about how to use the straightedge tool?**

Answer all questions.

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

Pause.

**SAY Read question 6 to yourself then answer the question.**

Pause while students read and answer the question.

The screenshot shows a digital math practice interface. At the top, there is a toolbar with various drawing tools (arrow, eraser, highlighter, pencil, eraser, straightedge, compass, protractor, help) and a user profile for 'John doe' with an 'Exit' button. The main content area displays the question: 'Which graph represents the solution to this inequality?' followed by the inequality  $-3n < 13.5$ . Below the question are four number line options, each labeled A, B, C, or D. Each number line ranges from -5 to 5 with tick marks every 1 unit. Option A shows a red line starting at an open circle at -4.5 and extending to the left. Option B shows a red line starting at a closed circle at -4.5 and extending to the left. Option C shows a red line starting at an open circle at -4.5 and extending to the right. Option D shows a red line starting at a closed circle at -4.5 and extending to the right. At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, 'Question 6 of 31 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, which shows  $n$  is greater than negative 4.5 ( $n > -4.5$ ).**

**Do you have any questions?**

Answer all questions.

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

Pause.

Directions: Click and drag each selected number to the correct box.

Use the given numbers to find an equivalent fraction and decimal.

Exponential Form	Fraction Form	Decimal Form
$10^{-2}$	=	=

$\frac{1}{100}$      $-0.02$   
 $\frac{1}{200}$      $-0.01$   
 $-\frac{1}{100}$      $0.02$   
 $-\frac{1}{200}$      $0.01$

Flag for Review    Question 7 of 31 Section 1    Section Review    Previous    Next

**SAY** Item 7 is an example of a drag and drop technology-enhanced item. The directions banner says, “Click and drag each selected number to the correct box.” You will click and drag your answers from the dark gray box to the correct locations. In order to have a complete answer, you must drag a number into each box.

The item says, “Use the given numbers to find an equivalent fraction and decimal.”

You may answer the item now. If you change your mind after clicking and dragging a number to a box, you can drag that number back to its original dark gray box and then select another number.

Pause while students answer the item.

**SAY** How did you answer the item?

Pause for replies.

**SAY** You should have  $\frac{1}{100}$  in the Fraction Form box and the decimal 0.01 in the Decimal Form box. You must have both numbers in the correct locations for your answer to be correct.

**SAY** Do you have any questions about how to answer the question?

Answer all questions.

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

Pause.

**SAY** Question 8 is an example of a technology-enhanced item where there may be more than one answer.

John doe  
Grade 7 Practice Items (2009 Math SOL) X Exit

**Directions: Click on a box to choose each statement you want to select. You must select all true statements.**

**Identify each true statement.**

$9 =  9 $	$4.1 =  -4.1 $	$-3 =  3 $
$ -2.6  = -2.6$	$ 7  = -7$	$ -8.5  = 8.5$

Flag for Review      Question 8 of 31      Section 1      Section Review      Previous      Next

**SAY** The gray directions banner at the top of the screen says, “Click on a box to choose each statement you want to select. You must select all true statements.” The item says, “Identify each true statement.”

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.)

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** Before you answer this question, let's practice using the pencil tool to narrow down the answer choices. Since this is a technology-enhanced item, you cannot use the eliminator tool to eliminate your answer choices. The eliminator tool can only be used on multiple-choice questions.

Click the icon on the toolbar that looks like a green pencil (). Draw an "X" over an answer choice that you do not wish to select. When you have finished with the pencil tool, click on the pencil icon again to put the tool away.

If you change your mind after eliminating an answer with the pencil tool, you can use the eraser tool to remove the "X." (Pause.)

Now answer the question.

Pause while students answer the question.

**SAY** How did you answer this question?

Pause for replies.

**SAY** You should have selected three statements:  
The first box in the top row:  $9 = |9|$  (nine equals the absolute value of nine);  
The second box in the top row:  $4.1 = |-4.1|$  (four and one tenth equals the absolute value of negative four and one tenth); and  
The third box on the bottom row:  $|-8.5| = 8.5$  (the absolute value of negative eight and five tenths equals eight and five tenths).

You must have all three of those equations selected, and only those three equations, to get the item correct.

Do you have any questions about the answer or how to use the pencil tool?

Answer all questions.

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

Pause.

**SAY** Question 9 is an example of a fill-in-the-blank item. The directions say, “Type your answer in the box. Your answer must be a fraction in simplest form. Use ‘/’ (forward slash) for the fraction bar.”

Now read and answer this question. Enter your answer in the box.

Pause while students read and answer the question.

Directions: Type your answer in the box. Your answer must be a fraction in simplest form. Use “/” for the fraction bar.

This spinner has 3 sections of equal size.

The arrow of this spinner was spun 30 times and landed on the blue section 12 times. The arrow will be spun one more time.

What is the theoretical probability that the arrow will land on the blue section on the next spin? Your answer must be in simplest form.

Flag for Review Question 9 of 31 Section 1 Section Review Previous Next

**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer is  $\frac{1}{3}$ , which you should have entered as *one forward slash three*

(1/3). Since the directions said the answer must be in simplest form, the fraction entered must be  $\frac{1}{3}$ .

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

Do you have any questions about how to type your answer in the box?

Answer all questions.

**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 and the forward slash.

**SAY** This response box will only accept numbers and the forward slash. 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 or the delete key on the keyboard to clear your answer. 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 and retyping their answer.

**SAY** Do you have any questions?

Answer all questions.

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

Pause.

The screenshot shows a math practice interface with a toolbar at the top containing icons for a mouse, eraser, pencil, highlighter, calculator, and help. The user's name "John doe" and "Grade 7 Practice Items (2009 Math SOL)" are visible in the top right corner. The main content area has the following text and figures:

**Directions:** Click on a location above each bar to show the bar height.

**This stem-and-leaf plot represents the numbers of lollipops sold by students during a fundraiser.**

Lollipops Sold	
Stem	Leaf
0	4 4 7 8
1	0 0 2 3 6 6
2	1 5 9
3	0 1 2 3 5 7 8

**Key**  
1|4 means 14 lollipops

**Construct a histogram that could represent the same set of data.**

**Lollipops Sold**

The histogram has a vertical axis labeled "Number of Students" with tick marks at 0, 2, 4, 6, 8, 10, 12, 14, 16, and 18. The horizontal axis is labeled "Number of Lollipops" and has four bins: 1-10, 11-20, 21-30, and 31-40. The bars are currently empty.

At the bottom of the interface, there is a "Flag for Review" button, "Question 10 of 31 Section 1" text, a "Section Review" button, and "Previous" and "Next" navigation buttons.

**SAY** Question 10 is an example of a graphing technology-enhanced item. The directions say, “Click on a location above each bar to show the bar height.”

**Now read the item.**

Pause while students read the item.

**SAY** To answer this question correctly, you will click the location above each bar so the correct height is displayed. Use the stem-and-leaf plot on the left side of the screen to determine the correct height for each bar in the histogram.

**If you change your mind about a bar height as you are graphing the data, you can click on another location, and the bar height will change.**

Pause while students create the graph.

**SAY** Which bar height did you graph for each interval?

Pause for replies.

**SAY** You should have graphed the following bar heights:  
Interval 1–10 should have a bar height of six.  
Interval 11–20 should have a bar height of four.  
Interval 21–30 should have a bar height of four.  
Interval 31–40 should have a bar height of six.

**Do you have any questions on how to graph the data?**

Pause to answer questions.

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

Pause.

**SAY** Read question 11 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 drawing tools (arrow, eraser, pencil, highlighter, selection tools) and a 'Help' button. The user's name 'John doe' and the text 'Grade 7 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:

**Matthew will randomly select 1 piece of fruit and 1 bag of chips to put in his school lunch bag. This table shows the choices he has for the fruit and the chips.**

**Matthew's Choices**

Fruit	Chips (flavor)
Apple	Plain
Orange	Barbecue
Banana	Cheddar
Peach	Sour Cream and Onion
Pear	

Below the table, the question asks: **What is the probability that Matthew will select an apple and a bag of barbecue chips?**

Four multiple-choice options are listed:

- A  $\frac{1}{20}$
- B  $\frac{1}{10}$
- C  $\frac{1}{9}$
- D  $\frac{2}{9}$

At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, the text 'Question 11 of 31 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

**SAY Determine which answer is correct and click on the answer you have chosen.**

Pause while students work to find the answer to the question.

**SAY Which answer did you choose?**

Pause for replies.

**SAY The correct answer is A,  $\frac{1}{20}$ . Do you have any questions?**

Answer all questions.

**SAY Click *Next* to go to question 12.**

Directions: Click on each correct box.

Select all of these that are equivalent to  $10^{-5}$ .

$\frac{-1}{10} \cdot \frac{-1}{10} \cdot \frac{-1}{10} \cdot \frac{-1}{10} \cdot \frac{-1}{10}$	0.00001
$\frac{1}{100,000}$	-0.00001
$(-10) \cdot (-10) \cdot (-10) \cdot (-10) \cdot (-10)$	$\frac{1}{10} \cdot \frac{1}{10} \cdot \frac{1}{10} \cdot \frac{1}{10} \cdot \frac{1}{10}$

Flag for Review      Question 12 of 31      Section 1      Section Review      Previous      Next

**SAY** The gray directions banner for this question says, “Click on each correct box.” The item says, “Select all of these that are equivalent to  $10^{-5}$ .”

This question is another example of a technology-enhanced item. To answer this question, you must click on each of the correct answers within the dark gray box. Notice with this type of question, a light blue box outlines the answer choice when you move your pointer tool over it. When you click it, the answer option is outlined in orange, indicating you have selected that choice as your answer. If you change your mind, click the orange box to remove the selection, and the orange outline disappears.

**Answer the question now.**

Pause while students answer the question.

**SAY** Which of the answers did you select?

Pause for replies.

**SAY** To answer this question correctly, you must have selected  $\frac{1}{100,000}$ , 0.00001, and  $\frac{1}{10} \cdot \frac{1}{10} \cdot \frac{1}{10} \cdot \frac{1}{10} \cdot \frac{1}{10}$ .

You must have all of these selected, and only these, for your answer to be correct. 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 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, ruler, protractor, and a Help button. The user's name 'John doe' and the page title 'Grade 7 Practice Items (2009 Math SOL)' are visible in the top right corner. The main content area contains the following text:

Let  $y$  represent any number in this sequence.

**1, 5, 25, 125, ...**

Which of these can be used to determine the next number in this sequence?

A  $5y$

B  $\frac{y}{5}$

C  $y+4$

D  $y-4$

At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, the text 'Question 13 of 31 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

**SAY** Read question 13 to yourself then answer the question.

Pause while students read and answer the question.

**SAY** Which answer did you choose?

Pause for replies.

**SAY** The correct answer is A,  $5y$ .

Do you have any questions?

Answer all questions.

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

Pause.

John doe  
Grade 7 Practice Items(2009 Math SOL) X Exit

Directions: Click on each correct box. Do not use a calculator to solve this problem.

Select each number that can be placed in the blank to make the value of this expression a negative number.

$-5 - \underline{\quad}$

-10	-5	-2
0	4	10

Flag for Review Question 14 of 31 Section 1 Section Review Previous Next

**SAY** The gray directions banner for this question says, “Click on each correct box. Do not use a calculator to solve this problem.” The item says, “Select each number that can be placed in the blank to make the value of this expression a negative number.”

To answer this question, you must click on each of the correct answers in the box.

Answer the question now.

Pause while students answer the question.

**SAY** Which answers did you select?

Pause for replies.

**SAY** To answer this question correctly, you must have selected  $-2$ ,  $0$ ,  $4$ , and  $10$ . You must have selected all of these numbers, and only these numbers, for your answer to be correct.

Do you have any questions about how to select your answer?

Answer all questions.

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

Pause.

Directions: Type your answer in the box.

Destiny wants to buy a scarf for her mother.

- The original price of the scarf is \$26.00, not including tax.
- The scarf is on sale for 25% off the original price.

What is the sale price of the scarf, not including tax?

\$

Question 15 of 31  
Section 1

Flag for Review Section Review Previous Next

**SAY** Question 15 is another fill-in-the-blank item. The directions say, “Type your answer in the box.”

Now read and answer this question. Enter your answer in the box.

Pause while students read and answer the question.

**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer is \$19.50, which you should have entered as nineteen period five zero. Notice the correct answer does not need to be the same length as the box.

Do you have any questions about how to type your answer in the box?

Answer all questions. This response box only accepts the digits 0 through 9 and the decimal. If a student asks about an equivalent answer, such as 19.5, any numerical responses that are equivalent to 19.50 would be considered correct.

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

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 pencil, eraser, and help. The user's name 'John doe' and the page title 'Grade 7 Practice Items (2009 Math SOL)' are visible in the top right corner. The main content area contains the following text:

**Patty went on a trip. The currency exchange rate for this trip is shown.**

**1 U.S. dollar = 1.34 Turkish lire**

**Patty bought an item that cost 30 U.S. dollars. Which is closest to the cost of this item in Turkish lire?**

Four multiple-choice options are listed:

- A 22.4 Turkish lire
- B 28.7 Turkish lire
- C 31.3 Turkish lire
- D 40.2 Turkish lire

At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, the text 'Question 16 of 31 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

**SAY Read question 16 to yourself then answer the question.**

Pause while students read and answer the question.

**SAY Which answer did you choose?**

Pause for replies.

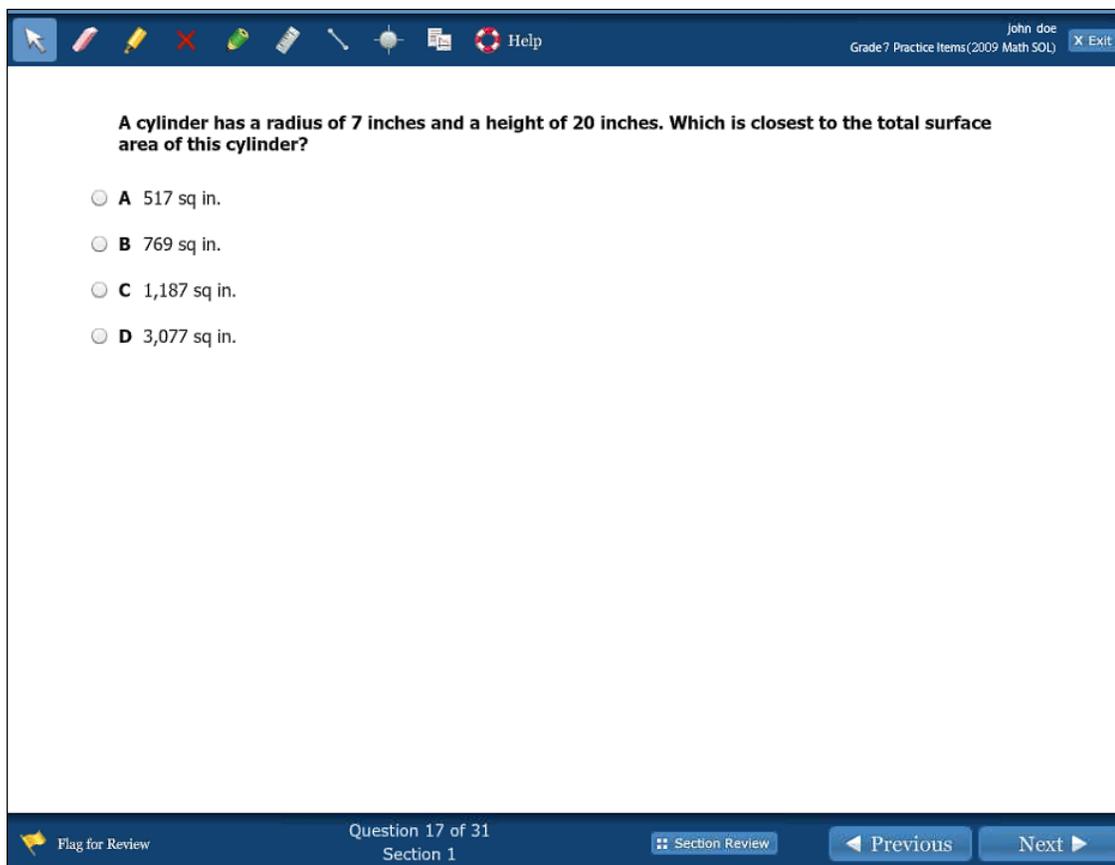
**SAY The correct answer is D, 40.2 Turkish lire.**

**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 screenshot shows a digital math practice window. At the top, there is a toolbar with icons for a mouse cursor, eraser, highlighter, red X, green checkmark, calculator, formula sheet, and a globe. The user's name 'John doe' and the text 'Grade 7 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:

**A cylinder has a radius of 7 inches and a height of 20 inches. Which is closest to the total surface area of this cylinder?**

○ A 517 sq in.  
○ B 769 sq in.  
○ C 1,187 sq in.  
○ D 3,077 sq in.

At the bottom of the window, there is a navigation bar with a 'Flag for Review' button, the text 'Question 17 of 31 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

**SAY** Read question 17 to yourself then answer the question. Remember, you may use the formula sheet located within the exhibit window.

Pause while students read and answer the question.

**SAY** Which answer did you choose?

Pause for replies.

**SAY** The correct answer is C, 1,187 sq in. Do you have any questions?

Answer all questions.

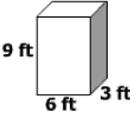
**SAY** Click *Next* at the bottom of the screen to continue to the next question.

Pause.

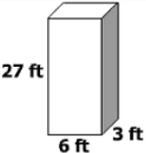
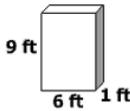
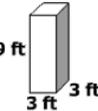
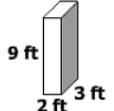
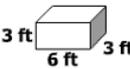
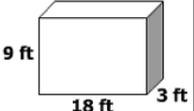
John doe  
Grade 7 Practice Items (2009 Math SOL) X Exit

Directions: Click on a box to choose a figure. You must select all correct figures.

The dimensions of a rectangular prism are shown.



A new prism is created by changing only one of the dimensions. The volume of the new prism is  $\frac{1}{3}$  the volume of the original prism. Which of these figures could represent the dimensions of the new prism?

Flag for Review Question 18 of 31 Section 1 Section Review Previous Next

**SAY** The gray directions banner for this question says, “Click on a box to choose a figure. You must select all correct figures.”

This question is another technology-enhanced item. To answer this question, you must click on the correct answers in the box. Again, you should notice that a light blue box outlines the answer choice when you hover over it, and an orange outline indicates that you have selected that choice as your answer after you click on it.

**Answer the question now.**

Pause while students answer the question.

**SAY** Which answers did you select?

Pause for replies.

**SAY** To answer this question correctly, you must have selected:  
The middle figure in the top row with dimensions 9 ft, 6 ft and 1 ft;  
The left figure in the second row with dimensions 9 ft, 2 ft and 3 ft; and  
The middle figure in the second row with dimensions 3 ft, 6 ft and 3 feet.  
You must have selected all three figures, and only those three figures, for your answer to be correct.

Do you have any questions?

Answer all questions.

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

Pause.

Directions: Type your answer in the box.

Quadrilateral  $WXYZ$  is similar to quadrilateral  $LMNP$ .

What is the measure of angle  $M$ ?

°

Question 19 of 31  
Section 1

Flag for Review Section Review Previous Next

**SAY** Question 19 is a fill-in-the-blank item. The directions say, “Type your answer in the box.”

Now read and answer this question. Enter your answer in the box.

Pause while students read and answer the question.

**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer is  $102^\circ$ .

**Again, you may notice that the correct answer is not the same length as the box. Do you have any questions about how to type your answer in the box?**

Answer all questions. This response box only accepts the digits 0 through 9.

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

Pause.

**SAY** Read question 20 to yourself then answer the question.

Pause while students read and answer 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 icon. The user's name 'John doe' and the text 'Grade 7 Practice Items (2009 Math SOL)' are visible in the top right corner, along with an 'Exit' button. The main content area contains the question: 'Which of these is NOT a property of a rhombus?' followed by four radio button options: A Four congruent sides, B Diagonals bisect each other, C Exactly one pair of parallel sides, and D Diagonals intersect at right angles. At the bottom, there is a navigation bar with a 'Flag for Review' button, 'Question 20 of 31 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, Exactly one pair of parallel sides.

**Do you have any questions?**

Answer all questions.

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

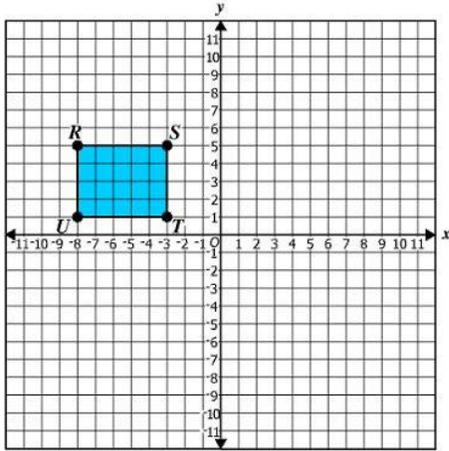
Pause.

**SAY** Read question 21 to yourself then answer the question.

Pause while students read and answer the question.

John H. Doe  
Grade 7 Practice Items (2009 Math SOL) X Exit

Quadrilateral  $RSTU$  is rotated  $180^\circ$  about the origin. Which coordinate pair best represents  $S'$ ?



A  $(-3, 5)$   
 B  $(-5, 3)$   
 C  $(3, -5)$   
 D  $(5, -3)$

Flag for Review Question 21 of 31 Section 1 Section Review Previous Next

**SAY** Which answer did you choose?

Pause for replies.

**SAY** The correct answer is C, the ordered pair three, negative five  $(3, -5)$ .

Do you have any questions?

Answer all questions.

**SAY** Before we go to the next question, let's discuss the dot tool.

**SAY** 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 an item. Only the pointer tool can be used to plot a point that is an answer to the question. On the SOL test, points plotted with the dot tool will not be scored.

Take a moment to practice using the dot tool to see what the dots made with this tool look like. Click on the dot tool in the toolbar. Now, use the dot tool to place a dot on the coordinate grid at the point  $(3, -5)$ . (Pause.)

Notice that these dots are large and blue. On the SOL test, there may be items that require you to answer by selecting a point on the coordinate grid or on a number line by clicking on that location with your pointer tool. Points plotted with the pointer tool will be red, so it is important to note that the dots placed with the dot tool are different than the dots used to indicate your answer. 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.)

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. If you mistakenly use the dot tool instead of the pointer tool in the CAT to answer a question, you will not be able to go on to the next question until you answer it using the pointer tool.

Do you have any questions about the difference between correctly plotting your 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.

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

Pause.

**SAY** Read question 22 to yourself then answer the question.

Pause while students read and answer the question.

A fair number cube has faces labeled 1, 2, 3, 4, 5, and 6. Wesley rolled this number cube 30 times. This table shows his results.

**Wesley's Results**

Number Landing Face-Up	Frequency
1	5
2	6
3	4
4	4
5	3
6	8

Wesley compared the theoretical and experimental probabilities. Which statement correctly compares the theoretical and experimental probabilities that the number landing face-up is a multiple of 3?

A The theoretical probability of  $\frac{1}{3}$  is less than the experimental probability.

B The experimental probability of  $\frac{1}{3}$  is less than the theoretical probability.

C The theoretical probability of  $\frac{12}{30}$  is less than the experimental probability.

D The experimental probability of  $\frac{12}{30}$  is less than the theoretical probability.

Question 22 of 31  
Section 1

**SAY** Which answer did you choose?

Pause for replies.

**SAY** The correct answer is A, The theoretical probability of  $\frac{1}{3}$  is less than the experimental probability.

**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 23 to yourself then answer the question.

Pause while students read and answer the question.

john doe  
Grade 7 Practice Items (2009 Math SOL) X Exit

**Jason represented the values of his 35 baseball cards in a histogram and in a stem-and-leaf plot. Which of these best describes the graph and characteristic that allow Jason to find the median value of his 35 baseball cards?**

- A A histogram because it lists each value in a set of data
- B A histogram because it shows the frequency of data using intervals
- C A stem-and-leaf plot because it lists each value in a set of data
- D A stem-and-leaf plot because it shows the frequency of data using intervals

Flag for Review Question 23 of 31 Section 1 Section Review Previous Next

**SAY Which answer did you choose?**

Pause for replies.

**SAY The correct answer is C, A stem-and-leaf plot because it lists each value in a set of data.**

**Do you have any questions?**

Answer all questions.

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

Pause.

John doe  
Grade 7 Practice Items (2009 Math SOL) [X Exit](#)

Which graph appears to contain all the ordered pairs in this table?

x	y
-5	-3
0	2
3	5

A

B

C

D

Flag for Review      Question 24 of 31      Section 1      Section Review      Previous      Next

**SAY** Read question 24 to yourself and then answer the question.

Pause while students read and answer the question.

**SAY** Which answer did you choose?

Pause for replies.

**SAY** The correct answer is A. 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 screenshot shows a digital math practice interface. At the top, there is a toolbar with icons for a mouse cursor, eraser, pencil, highlighter, and other tools. The user's name 'John doe' and the page title 'Grade 7 Practice Items (2009 Math SOL)' are visible in the top right corner. The main content area contains the following text:

Which phrase best represents  $\frac{d}{3} + 8 = 12$  ?

- A Eight more than the quotient of a number,  $d$ , and three is twelve.
- B Eight more than the difference of a number,  $d$ , and three is twelve.
- C The quotient of eight more than a number,  $d$ , and three is twelve.
- D The difference of eight more than a number,  $d$ , and three is twelve.

At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, the text 'Question 25 of 31 Section 1', a 'Section Review' button, and 'Previous' and 'Next' buttons.

**SAY** Read question 25 to yourself then answer the question.

Pause while students read and answer the question.

**SAY** Which answer did you choose?

Pause for replies.

**SAY** The correct answer is A, Eight more than the quotient of a number,  $d$ , and three is twelve.

**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 26 to yourself then answer the question.

Pause while students read and answer 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, ruler, compass, and help. The user's name 'john doe' and the page title 'Grade7 Practice Items(2009 Math SOL)' are visible in the top right corner. The main content area contains the question: 'If  $n = 3$ , what is the value of  $(3 + n^4) \div 3$ ?' followed by four radio button options: A 5, B 16, C 28, and D 30. At the bottom, there is a navigation bar with a 'Flag for Review' button, 'Question 26 of 31 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, 28.

**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 27 to yourself and then answer the question.

Pause while students read and answer the question.

The screenshot shows a digital math practice interface. At the top, there is a toolbar with various icons for navigation and editing, and a user profile section for 'John doe' with an 'Exit' button. The main content area contains the question: 'What is the solution to the number sentence?' followed by the equation  $\frac{d - 3.4}{7} = 2.8$ . Below the equation are four multiple-choice options: A  $d = 3.0$ , B  $d = 3.8$ , C  $d = 16.2$ , and D  $d = 23.0$ . At the bottom of the interface, there is a status bar with a 'Flag for Review' button, 'Question 27 of 31 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 D,  $d = 23.0$ .

**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 28 is an example of a fill-in-the-blank item. The directions say, "Type your answer in the box. Use '.' for the decimal point."

**Now read and answer this question. Enter your answer in the box.**

Pause while students read and answer the question.

The screenshot shows a digital practice item interface. At the top, there is a toolbar with various icons for navigation and editing, and a user profile section for 'John doe' with an 'Exit' button. Below the toolbar, a grey bar contains the directions: 'Directions: Type your answer in the box. Use "." for the decimal point.' The main content area displays a word problem: 'Clinton earns \$12 per hour cutting grass. He earned a total of \$162 last week cutting grass. Exactly how many hours did he spend cutting grass last week?'. Below the question is a text input box followed by the word 'hours'. At the bottom of the interface, there is a navigation bar with a 'Flag for Review' button, the question identifier 'Question 28 of 31 Section 1', a 'Section Review' button, and 'Previous' and 'Next' navigation buttons.

**SAY** How did you answer the question?

Pause for replies.

**SAY** The correct answer is 13.5 hours, which you should have entered as 13 period 5.

**Again, the correct answer does not need to be the same length as the box.  
Do you have any questions about how to type your answer in the box?**

Answer all questions. This response box only accepts digits 0-9 and the decimal. If a student asks about equivalent answers, such as 13.50 or 13.500, these numbers would also be considered correct responses.

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

Pause

Directions: Click on each correct box.

Select all of the characteristics of the graph for  $-x \leq -9$ .

Circle is open    Circle is closed    Graph shaded to the right of the circle    Graph shaded to the left of the circle

Flag for Review    Question 29 of 31 Section 1    Section Review    Previous    Next

**SAY** The gray directions banner for this question says, “Click on each correct box.” The item says, “Select all of the characteristics of the graph for  $-x \leq -9$ .”

**Answer the question now.**

Pause while students answer the question.

**SAY** Which answers did you select?

Pause for replies.

**SAY** To answer this question correctly, you must have selected “Circle is closed” and “Graph shaded to the right of the circle.” You must have selected both of these characteristics, and only these characteristics, for your answer to be correct.

**Do you have any questions?**

Answer all questions.

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

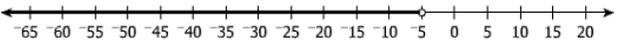
Pause.

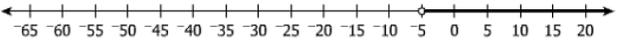
**SAY** Read question 30 to yourself then answer the question.

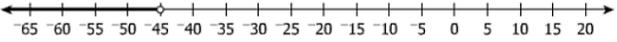
Pause while students read and answer the question.

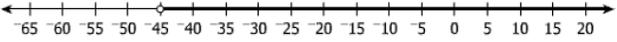
John doe  
Grade 7 Practice Items (2009 Math SOL) [X Exit](#)

Which graph represents the solution set to  $-3x < 15$ ?

A 

B 

C 

D 

Flag for Review Question 30 of 31 Section 1 [Section Review](#) [Previous](#) [Next](#)

**SAY** Which answer did you choose?

Pause for replies.

**SAY** The correct answer is B, the graph that represents  $x$  is greater than negative five ( $x > -5$ ).

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** Item 31 is an example of a drag and drop technology-enhanced item. The directions banner says, “Click and drag an equation into the correct box.” You will click and drag your answers from the dark gray box to the correct locations. In order to have a complete answer, you must drag an equation into each box.

The item says, “Identify the equation that illustrates only the specific property of real numbers.” If you change your mind after clicking and dragging an equation to a box, you can drag the equation back to the dark gray box and then select another equation.

You may answer the item now.

Pause while students answer the item.

**Directions: Click and drag an equation into the correct box.**

Identify the equation that illustrates only the specific property of real numbers.

Commutative Property of Addition	Additive Inverse	Multiplicative Property of Zero

$5 \cdot \frac{1}{5} + 5 = 1 + 5$	$(7 + 3) + 5 = 5 + (7 + 3)$
$8 + (-8) + 2 = 0 + 2$	$5 \cdot \frac{1}{5} + 5 \cdot 0 = 5 \cdot \frac{1}{5} + 0$
$(7 + 3) + 5 = 7 + (3 + 5)$	$8 + (-8) + 2 + 0 = 8 + (-8) + 2$

Question 31 of 31  
Section 1

Flag for Review Section Review Previous Next

**SAY** How did you answer the item?

Pause for replies.

**SAY** You should have placed:  
 Under Commutative Property of Addition,  $(7 + 3) + 5 = 5 + (7 + 3)$ ;  
 Under Additive Inverse,  $8 + (-8) + 2 = 0 + 2$  ; and  
 Under Multiplicative Property of Zero,  $5 \cdot \frac{1}{5} + 5 \cdot 0 = 5 \cdot \frac{1}{5} + 0$  .

You must have each equation in the correct location for your answer to be correct.

Do you have any questions?

Answer all questions.

If you want your students to practice using the Help tool (as mentioned on page 9), they can do so now.

Students did not have practice with the ruler as they worked through the practice items. If you would like the students to practice with the ruler, have them return to question 31 and measure the height of the dark gray box. The student may measure it in inches or centimeters, whichever you prefer. The box height is approximately  $2\frac{1}{4}$  inches or 5.8 centimeters.

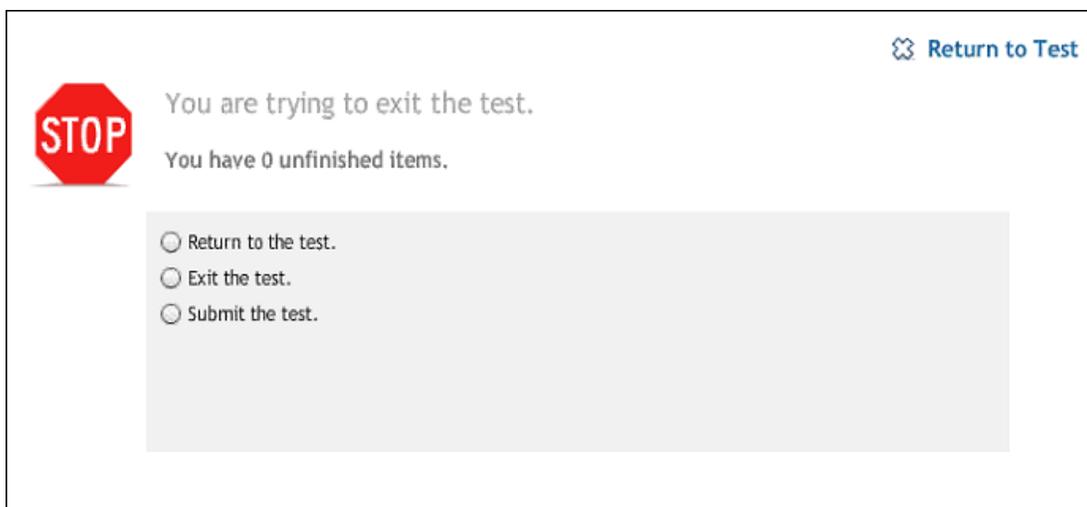
**SAY** You have completed the practice items. Are there any questions on anything we have reviewed today?

Answer all questions.

Since the Grade 7 Mathematics CAT does not have a Section Review screen, the remainder of these instructions will close TestNav on the student’s workstation without discussion of the Section Review screen. Please have students use the [Mathematics CAT Training Test](#) to experience how they will exit TestNav from the CAT.

**SAY** Now click the *Exit* button in the top right of the screen. (Pause.)

You will see a stop sign with three choices. (Pause.)



**SAY** Select the third choice, “*Submit the test.*” A green box will appear that says, “*Final Submit.*” Click on this box. Once you click on this box, another box will appear that says, “*Close TestNav.*” Click on this box.

Students will not see this screen in the CAT because a completed CAT is submitted automatically for a student. However, “Close TestNav” will appear on their screen after they have finished the test so they will know it has been submitted.

**SAY** This completes our review of the Grade 7 SOL Mathematics Practice items.

Thank you for reviewing the Grade 7 Mathematics Practice Items with your students.

**APPENDIX A****Answers to Grade 7 Mathematics Practice Items****Sample A**

The correct answer is A,  $x=3$ .

**Sample B**

The correct answer is 20 minutes.

**Question 1**

The correct answer is A,  $-3 \cdot 6 = -18$ .

**Question 2**

The correct answer is C,  $396 \text{ cm}^3$ .

**Question 3**

The correct answer is A,  $-2.5$ .

**Question 4**

The correct answer is B,  $\frac{8}{35}$ .

**Question 5**

The correct answer is D, 4 pencils.

**Question 6**

The correct answer is C, which shows  $n > -4.5$ .

**Question 7**

You should have  $\frac{1}{100}$  in the Fraction Form box and the decimal 0.01 in the Decimal Form box.

You must have both numbers in the correct locations for your answer to be correct.

**Question 8**

You should have selected three statements:

The first box in the top row:  $9 = |9|$  (nine equals the absolute value of nine);

The second box in the top row:  $4.1 = |-4.1|$  (four and one tenth equals the absolute value of negative four and one tenth); and

The third box on the bottom row:  $|-8.5| = 8.5$  (the absolute value of negative eight and five tenths equals eight and five tenths).

**Question 9**

The correct answer is  $\frac{1}{3}$ , which you should have entered as *one forward slash three* (1/3). Since the directions said the answer must be in simplest form, the fraction entered must be  $\frac{1}{3}$ .

**Answers to Grade 7 Mathematics Practice Items (continued)****Question 10**

The bars should be the following heights:  
Interval 1-10 should have a bar height of six.  
Interval 11-20 should have a bar height of four.  
Interval 21-30 should have a bar height of four.  
Interval 31-40 should have a bar height of six.

**Question 11**

The correct answer is A,  $\frac{1}{20}$ .

**Question 12**

To answer this question correctly, you must have selected:

$\frac{1}{100,000}$ , 0.00001, and  $\frac{1}{10} \cdot \frac{1}{10} \cdot \frac{1}{10} \cdot \frac{1}{10} \cdot \frac{1}{10}$ .

**Question 13**

The correct answer is A, 5y.

**Question 14**

To answer this question correctly, you must have selected -2, 0, 4, and 10.

**Question 15**

The correct answer is 19.50 .

**Question 16**

The correct answer is D, 40.2 Turkish lire.

**Question 17**

The correct answer is C, 1,187 sq in.

**Question 18**

To answer this question correctly, you must have selected:  
the middle figure in the top row with dimensions 9 ft, 6 ft and 1 ft,  
the left figure in the second row with dimensions 9 ft, 2 ft and 3 ft, and  
the middle figure in the second row with dimensions 3 ft, 6 ft and 3 feet.

**Question 19**

The correct answer is 102.

**Question 20**

The correct answer is C, Exactly one pair of parallel sides.

**Question 21**

The correct answer is C, (3, -5).

**Question 22**

The correct answer is A, The theoretical probability of  $\frac{1}{3}$  is less than the experimental probability.

**Question 23**

The correct answer is C, A stem-and-leaf plot because it lists each value in a set of data.

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**Answers to Grade 7 Mathematics Practice Items (continued)****Question 24**

The correct answer is A.

**Question 25**

The correct answer is A, Eight more than the quotient of a number,  $d$ , and three is twelve.

**Question 26**

The correct answer is C, 28.

**Question 27**

The correct answer is D,  $d = 23.0$ .

**Question 28**

The correct answer is 13.5 hours.

**Question 29**

To answer this question correctly, you must have selected “Circle is closed” and “Graph shaded to the right of the circle.”

**Question 30**

The correct answer is B.

**Question 31**

You should have:

In the “Commutative Property of Addition” box, the equation  $(7 + 3) + 5 = 5 + (7 + 3)$ ;

In the “Additive Inverse” box, the equation  $8 + (-8) + 2 = 0 + 2$ ; and

In the “Multiplicative Property of Zero” box, the equation  $5 \cdot \frac{1}{5} + 5 \cdot 0 = 5 \cdot \frac{1}{5} + 0$ .

You must have each equation in the correct location for your answer to be correct.

## APPENDIX B

### **An Overview of when a Technology-Enhanced Item (TEI) is Considered “Answered” by the Student**

On the Computer Adaptive Test (CAT), the student cannot proceed to the next question until the current question is considered “Answered.” When an item is considered “Answered” the *Next* button on the bottom toolbar will be active. Once the *Next* button is selected, the student will proceed to the next question and will not be able to return to any previously answered question.

These criteria will be used to determine when a TEI is considered “Answered.”

#### **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 be considered answered. If a student enters an answer and then completely removes that answer from the fill-in-the-blank box, the item will be considered unanswered.

#### **Histogram or Bar Graph Items**

For all histogram or bar graph items, when a student raises any bar, the item will be considered answered. If the student moves all bars back down to the original heights, the item will be considered unanswered.

#### **Hot Spot Items**

When the number of correct responses is indicated in the directions or in the item itself, the item will be considered answered only when the student selects that number of hot spots. For example, if the student is directed to select three answers, the item will be considered unanswered if the student selects one or two answers. It will only be considered 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 be considered as answered once the student selects one answer. For example, if the student is required to “Select all the correct answers,” the item will be considered 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.

#### **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 be considered answered 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 be considered answered 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 not be considered answered.

## **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 as to when it is considered answered. For items with a specified number of bays, the item will show be considered as answered 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 item will be considered answered once three draggers have been input by the student. Or, in another example, if the directions or question indicate that all draggers need to be used to answer the item, then the item will be considered as answered only when all draggers have been used. If the number of draggers 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, the item will be considered as answered once the student places one dragger in a bay.