LEAP CONNECT

Directions for Practice Test Administration

Mathematics

Grade 8

DEPARTMENT of EDUCATION
Louisiana Believes

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Purpose

The *Directions for Practice Test Administration* (DPTA) provides the Test Administrator (TA) of the LEAP Connect practice test with specific instructions for administration of this particular practice test. Each DPTA provides the exact wording of the items to be used by the TA, the materials needed in preparation of the test, and guidelines for how to present the items to the student.

Materials

Materials needed for the LEAP Connect Practice Test Administration:

1. *Directions for Practice Test Administration* (DPTA)
2. *Procedures for Assessing Students Who Are Visually Impaired, Deaf, or Deaf-Blind*
3. *Grade 8 Mathematics Practice Test Reference Materials*

Directions

1. **Know and follow all directions for test administration** provided in the DPTA and *Procedures for Assessing Students Who Are Visually Impaired, Deaf, or Deaf-Blind*.
2. Be familiar with and utilize the Text to Speech (TTS) as appropriate. The DRC INSIGHT Assessment System includes TTS that will read aloud the text of directions, items, and answer options and will also read aloud standardized descriptive statements for tables, charts, graphs, and timelines.
   a. This text is read to all students using a consistent rate of reading and tone of voice. If a student wishes to have any or all of the text repeated, click on the Starting Points button (the circle between the Stop and Play/Pause buttons). Then use the mouse to select the starting point (blue circle) just before the text that needs to be repeated.
   b. To change the volume or speed of the TTS or turn off the follow-along, select the Options button at the bottom of the screen, then select Audio Settings and adjust as desired.
   c. If the TTS will not be used, the TA can turn off the volume and the follow-along using the Audio Settings. The TA must read the directions, items, answer option text, and graphic descriptions **exactly as written** using a consistent rate of reading and tone of voice.
3. Be familiar with and utilize the Alternative Text as appropriate. Alternative Text is bracketed and written in italics. Alternative Text is included for students who are blind or have a visual impairment and require graphics to be described. This Alternative Text includes descriptive statements for tables, charts, graphs, and any graphics necessary for appropriate interaction with the items to be described.

Guidance on Printed Materials

Mathematics Practice Test Reference Materials include required graphics and the answer options for each practice test item. The DPTA will prompt the TA when the required graphics are to be presented to the student. The answer options are included so they can be copied and used as needed (e.g., eye-gaze boards).

Selected-Response Items

Selected-response items are presented to students in the following order:

- Item stimulus (which may include an example, picture, graphic, equation, formula, or other illustration)
- Item question
- Answer options (which are indicated by radio buttons and presented vertically)

Students independently select a response from the options. Being mindful that students will respond in a variety of ways (e.g., with words, gestures, eye gaze, communication devices, assistive technology, etc.), TAs can enter responses on behalf of the student. Ensure that Augmentative and Alternative Communication (AAC) and Assistive Technology (AT) used routinely for instruction are available to support the student in communicating responses. Each item will indicate the use of a calculator in the DPTA and DRC INSIGHT. Students with a calculator accommodation may use a calculator for all practice test questions.

Mathematics Selected-Response Item Example

The LEAP Connect practice test items reflect grade-level content presented at varying degrees of complexity. The following item example illustrates a selected-response item and components which support the ways that students with a wide range of learner characteristics are presented with practice test tasks. The following item example does not reflect ALL content that is assessed in each grade-level content area and does not represent every degree of complexity.

Mathematics Item Example

This item is about finding the mean of a set of data.

The mean is the average of the numbers in a set of data.

TTS or TA reads item directions.

This data table shows the number of algebra problems Chris did for homework each of 4 days last week.

Directions for TA to point to the data table.

Point to the data table as the TTS or TA reads the graphic description.

[Graphic description: "This is a data table titled 'Number of Algebra Problems.' It shows the numbers of problems Chris completed for each day of homework. Five problems were completed on Monday, four problems were completed on Tuesday, five problems were completed on Wednesday, and six problems were completed on Thursday."]

TTS or TA reads graphic description.

Number of Algebra Problems

Day	Number of Problems
Monday	5
Tuesday	4
Wednesday	5
Thursday	6

TTS or TA reads item text.

To find the mean, add all of the values in the list and divide the sum by the number of values.

To find the mean number of problems, first add all of the values.

Directions for TA to point to the equation.

Point to the equation as the TTS or TA reads the graphic description.

5 + 4 + 5 + 6 = 20

Then divide the sum by the number of values. There are 4 values, so divide 20 by 4.

Point to the equation as the TTS or TA reads the graphic description.

Directions for TA to point to the equation.

[Graphic description: "Twenty divided by four equals five."]

20 ÷ 4 = 5

The mean number of problems is 5.

Directions for TA to point to the data table.

This is another data table.

This data table shows the number of magazine articles Jan read 4 days last week.

Point to the data table as the TTS or TA reads the graphic description.

[Graphic description: "This is a data table titled 'Number of Magazine Articles.' It shows the numbers of articles Jan read for four days last week. Four articles were read on Monday, two articles were read on Tuesday, four articles were read on Wednesday, and six articles were read on Thursday."]

Number of Magazine Articles

Day	Number of Articles
Monday	4
Tuesday	2
Wednesday	4
Thursday	6

TTS or TA reads question text.

What is the mean number of articles Jan read each day last week?

Point to each option as the TTS or TA reads the option.

Directions for TA to point to each answer option.

A.   4 articles

TTS or TA reads each answer option.

B.   6 articles

C.   16 articles

Procedures for Constructed-Response (CR) Tasks

The CR tasks require students to construct an answer rather than select an answer from multiple-choice options. The TA must enter the student CR score into DRC INSIGHT. The CR task is presented to the student in a standardized, scripted sequence of steps, culminating in a TA's scoring of the student performance according to the Mathematics Scoring Rubric. The Mathematics Scoring Rubrics are included with the appropriate CR tasks in the DPTA and provide scoring standards that must be used to evaluate student responses.

Administering the CR Tasks

- Become familiar with the CR tasks and setup requirements.
- Rehearse administering each task before administering it to a student by reading the script for each task.
- Become familiar with the scoring rubric and directions for scoring the student response.
- Prepare the test setting:
  - Assemble any needed materials (pencils, markers, etc.).
  - Provide any allowable manipulatives (e.g., counters).
  - Have a calculator available.
  - Provide materials required for student accommodations.
  - Position the student so that they will have the optimal vantage to view and manipulate materials in order to facilitate sustained attention.
  - Eliminate noise and visual distractions that may divert the student's attention.
  - Collect all printed materials that the student will need.
  - Enlarge any stimulus materials, using the enlarge feature on a printer or copier, if needed.
  - Locate the appropriate stimulus material, which is identified by name on the front of each for ease of handling before, during, and after test administration. Cut the stimulus materials apart (if applicable).

Scoring the Mathematics CR Tasks

In order to have consistent and reliable CR scoring, TAs must understand and apply the Mathematics Scoring Rubrics in the same way to every student's response.

Independently score a student's performance on the CR tasks. Being mindful that students will respond in a variety of ways (e.g., with words, gestures, eye gaze, communication devices, assistive technology, etc.), careful and meticulous observation will enable the TA to accurately assign the appropriate score point based on the Mathematics Scoring Rubrics in the DPTA.

Procedures for Entering the Student Score for CR Tasks

Record the student score in the DRC INSIGHT Assessment System. Answer options will be: "The student provided the correct answer." or "The student did not provide the correct answer." After recording the student score, continue to the next item.
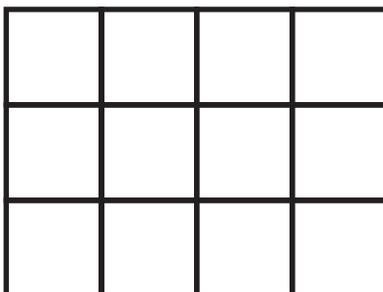
Session 1

Calculator may be used on this item.

Item 1

This item is about the area of a rectangle.

Point to the 4 × 3 rectangle.

[For students with visual impairment, read "This is a rectangle. It is four units long and three units wide."]
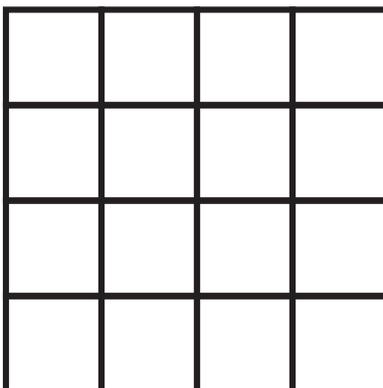
The area of a rectangle is the space inside it.

Point to the inside of the rectangle to indicate the area.

The rectangle's width increased.

Point to the 4 × 4 rectangle.

[For students with visual impairment, read "This is a rectangle. It is four units long and four units wide."]

Item 1, continued

How has the rectangle changed?

Trace the width of the 4 × 4 rectangle.

Point to each option as the TTS or TA reads each option.

A.   The rectangle's area **increased**.

B.   The rectangle's area **decreased**.

Calculator may be used on this item.
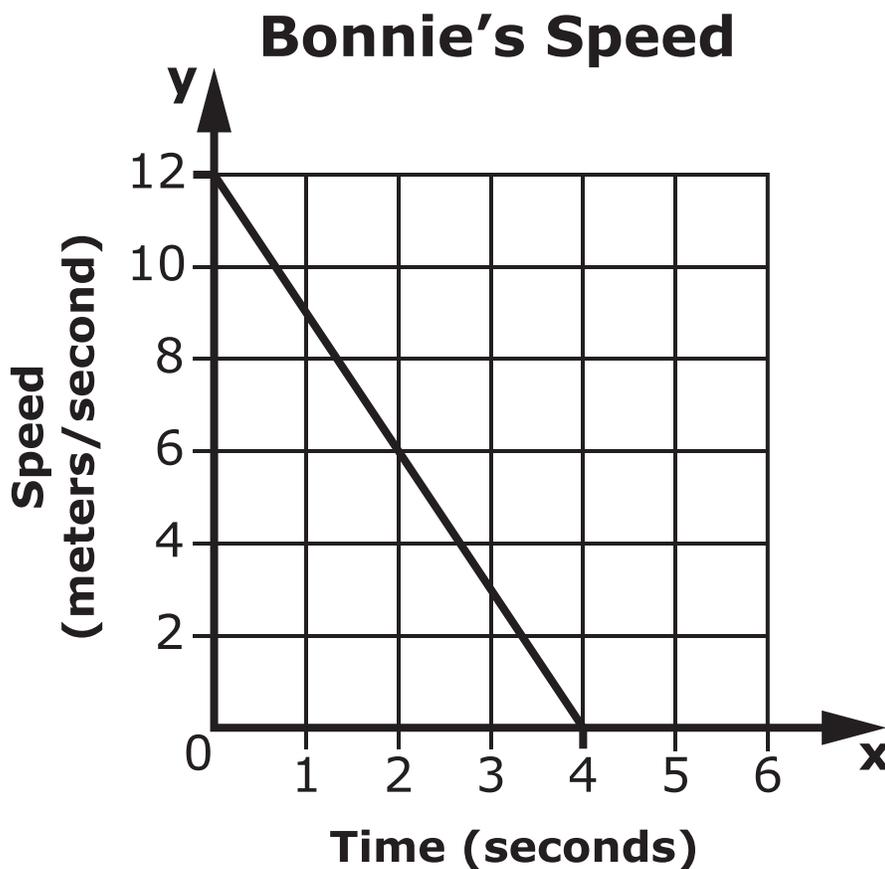
Item 2

This item is about a line graph.

A line graph shows a relationship between two quantities.

When Bonnie skis downhill, her speed increases each second.

Which line graph shows Bonnie's speed increasing?

> *Point to each option as the TTS or TA reads the graphic description.*
>
> *[Graphic description: "A. This line graph is titled, 'Bonnie's Speed.' The x-axis starts at zero and has six equally spaced marks increasing by ones moving to the right. It is labeled Time in seconds. The y-axis starts at zero and has six equally spaced marks increasing by twos moving upward. It is labeled Speed in meters per second."]*

Bonnie's Speed

A.

[Graphic description: "B. This line graph is titled, 'Bonnie's Speed.' The x-axis starts at zero and has six equally spaced marks increasing by ones moving to the right. It is labeled Time in seconds. The y-axis starts at zero and has six equally spaced marks increasing by twos moving upward. It is labeled Speed in meters per second."]

Bonnie's Speed

B.
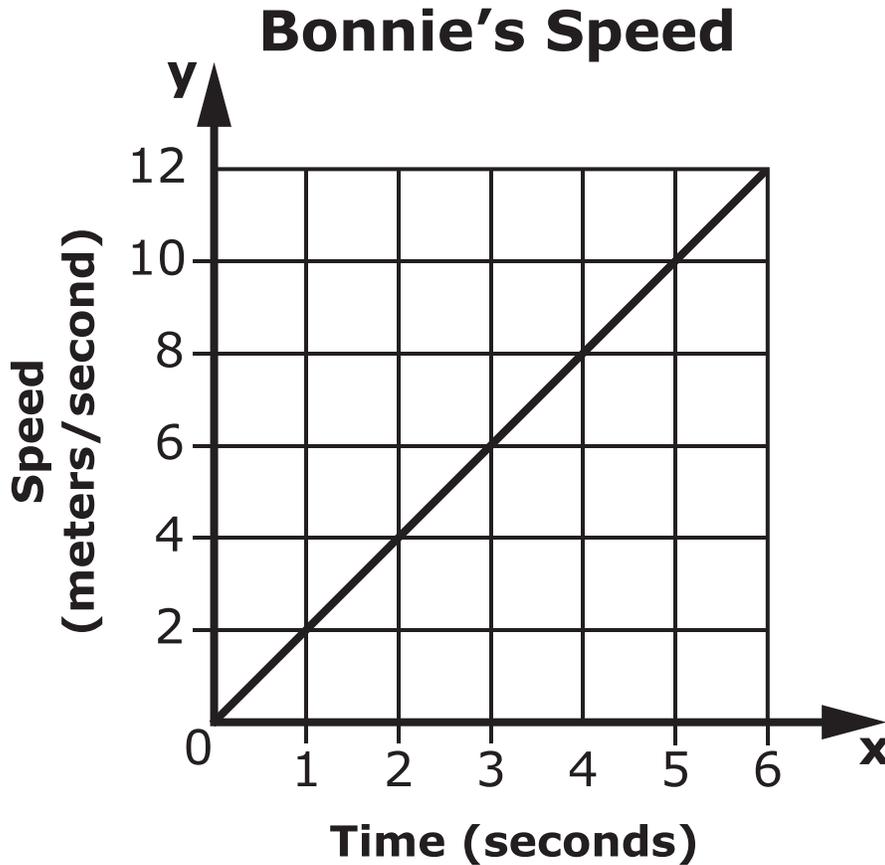
Calculator may be used on this item.

Item 3

This item is about a relationship.

The relationship is about the number of people working in a garden and the number of flowers planted. The more people working in the garden, the more flowers are planted.

Which data table shows that the **more** people who worked in the garden, the **more** flowers were planted?

Point to each option as the TTS or TA reads the graphic description.

[Graphic description: "A. This is a data table titled, 'Flowers Planted.' It shows the number of people who worked in a garden and the number of flowers planted. One person worked in a garden and two flowers were planted. Five people worked in a garden and eight flowers were planted."]

A.

[Graphic Description: "B. This is a data table titled, 'Flowers Planted.' It shows the number of people who worked in a garden and the number of flowers planted. Five people worked in a garden and two flowers were planted. One person worked in a garden and eight flowers were planted."]
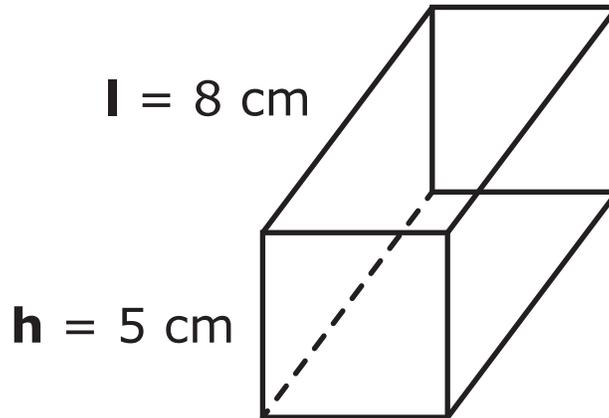
B.

Calculator may be used on this item.

Item 4

This item is about the length of a rectangular prism.

This is a picture of a rectangular prism.

> *Point to the picture of a rectangular prism.*

l = 8 cm

h = 5 cm

The length of this rectangular prism is 8 centimeters.

> *Point to the length and its label.*

The height of this rectangular prism is 5 centimeters.

> *Point to the height and its label.*

What is the rectangular prism's length?

> *Point to each option as the TTS or TA reads each option.*

A.   8 centimeters

B.   5 centimeters

Calculator may be used on this item.

*Provide student with Graph 1, "Graph B" from the Grade 8 Mathematics Practice Test Reference Materials.*

Item 5

This item is about finding the slope of a line.

The slope is how steep a line is.

Trace the line on Graph A with one finger.

[Graphic description: "This is a line graph titled, 'Graph A.' The x-axis starts at zero and has six equally spaced marks increasing by ones moving to the right. The y-axis starts at zero and has five equally spaced marks increasing by ones moving upward."]
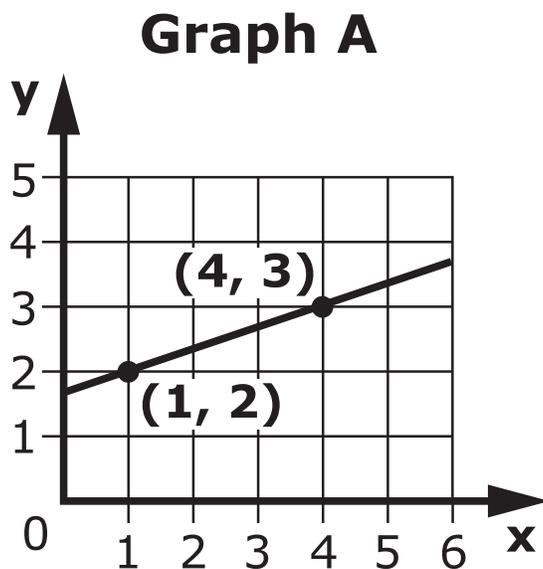
Graph A

Slope can be written as a fraction.

Point to the slope equation as the TTS or TA reads the graphic description.

[Graphic description: "Slope equals rise over run."]

$$\text{Slope} = \frac{\text{rise} \updownarrow}{\text{run} \leftrightarrow}$$

Item 5, continued

One way to find the slope of a line is to choose two points marked on the line. For example, you could choose points (1, 2) and (4, 3).

> *Point to each point on Graph A as the TTS or TA reads the ordered pairs to the student.*

To find the rise, start at point (1, 2) and count up to the line that intersects point (4, 3): one. This is the rise: 1.

> *Trace the y-axis from two to three and count the numbers on the y-axis scale to the student.*

To find the run, start at the 1 and count over to point (4, 3): one, two, three. This is the run: 3.

> *Trace the x-axis from one to four and count the numbers on the x-axis scale to the student.*

The slope is *[Graphic description: "one over three"]* $\frac{1}{3}$.

> *Point to the equation as the TTS or TA reads the graphic description.*

> *[Graphic description: "Slope equals rise over run equals one over three."]*

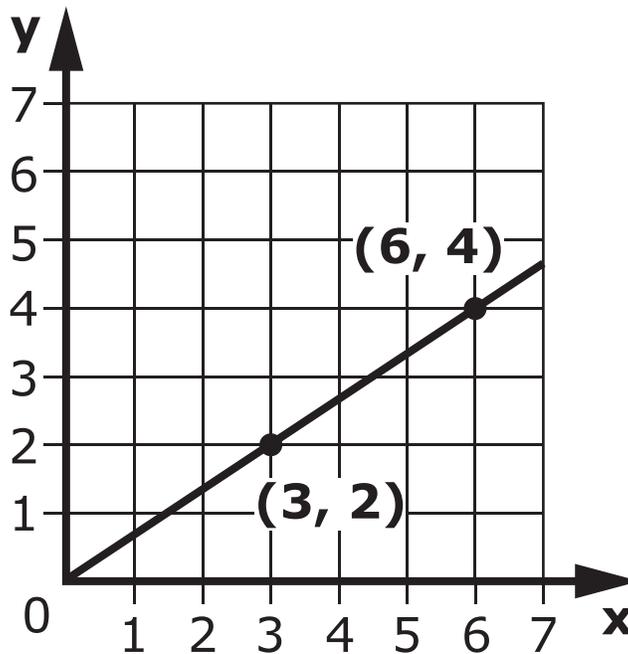$$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{1}{3}$$

This is another graph.

Point to the graph as the TTS or TA reads the graphic description.

[Graphic description: "This is a line graph titled, 'Graph B.' The x-axis starts at zero and has seven equally spaced marks increasing by ones moving to the right. The y-axis starts at zero and has seven equally spaced marks increasing by ones moving upward."]

Graph B

What is the slope of this line?

Point to the line on Graph B.

Point to each option as the TTS or TA reads each graphic description.

[Graphic description: "A. Slope equals rise over run equals three over two."]

A. $\text{Slope} = \dfrac{\text{rise}}{\text{run}} = \dfrac{3}{2}$

[Graphic description: "B. Slope equals rise over run equals two over three."]

B. $\text{Slope} = \dfrac{\text{rise}}{\text{run}} = \dfrac{2}{3}$

Item 5, continued

C. $$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{6}{3}$$

Calculator may be used on this item.

Item 6

This item is about solving an equation with a variable.

A variable is a letter that can be used in place of an unknown number.

This is an equation with a variable.

> *Point to the equation as the TTS or TA reads the graphic description.*
>
> *[Graphic description: "four times **n** equals twenty-four"]*

$$4 \times \mathbf{n} = 24$$

In this equation, the letter **n** is a variable.

> *Point to the letter **n** in the equation.*

Solve the equation to find out what the letter **n** equals in the equation.

One way to solve the equation is to divide each side by 4.

> *Point to the equation as the TTS or TA reads the graphic description.*
>
> *[Graphic description: "**n** equals six."]*

$$\mathbf{n} = 6$$

This is another equation with a variable.

> *Point to the equation as the TTS or TA reads the graphic description.*
>
> *[Graphic description: "four times **p** equals sixty"]*

$$4 \times \mathbf{p} = 60$$

Item 6, continued

In this equation, the letter **p** is a variable.

*Point to the letter **p** in the equation.*

What does the letter **p** equal in the equation?

Point to each option as the TTS or TA reads each option.

A.   64

B.   56

C.   15

Calculator may be used on this item.

Item 7

This item is about locating numbers on a number line.

This number line shows all the positive numbers from 0 to 5. This is *[Graphic description: "square root of eleven"]* $\sqrt{11}$ on the number line.

The *[Graphic description: "square root of eleven"]* $\sqrt{11}$ is about *[Graphic description: "three and three tenths"]* 3.3.

> *Point to √11 on the number line.*

> *[Graphic description: "This is a number line beginning at zero on the left, followed by five equally spaced marks, and ending at five on the right. There is a point between three and four that is labeled the square root of eleven."]*

$$\sqrt{11}$$
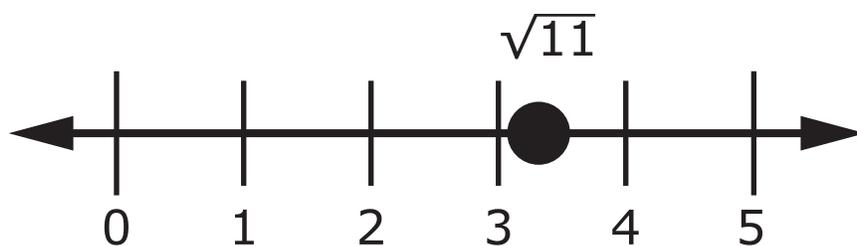
The number *[Graphic description: "three and three tenths"]* 3.3 is the approximate location of *[Graphic description: "square root of eleven"]* $\sqrt{11}$ on the number line.

> *Point to √11 on the number line.*

This is *[Graphic description: "square root of eight"]* $\sqrt{8}$.

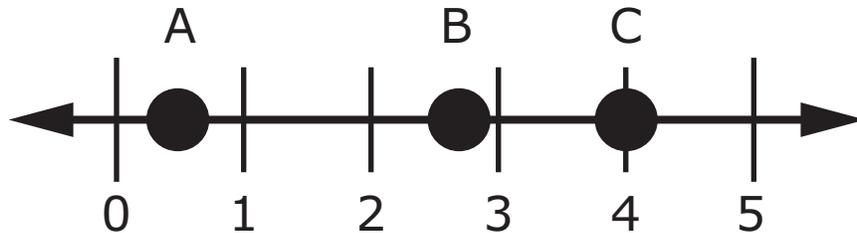> *Point to the symbol for the square root of eight.*

The value of *[Graphic description: "square root of eight"]* $\sqrt{8}$ is about *[Graphic description: "two and eight tenths"]* 2.8.

Item 7, continued

This is another number line. Each letter stands for a point on the number line.

Point to the number line as the TTS or TA reads the graphic description.

[Graphic description: "This is a number line beginning at zero on the left, followed by five equally spaced marks, and ending at five on the right. There are three labeled points on the number line. Point A is located between zero and one. Point B is located between two and three. Point C is located at four."]

A   B   C

0   1   2   3   4   5

Use the number *[Graphic description: "two and eight tenths"]* 2.8 to find the approximate location of $\sqrt{8}$ *[Graphic description: "square root of eight"]* on the number line.

Which point shows the approximate location of $\sqrt{8}$ *[Graphic description: "square root of eight"]* on the number line?

Point to each option on the number line as the TTS or TA reads each option.

A.   point A

B.   point B

C.   point C

Calculator may be used on this item.

Provide Data Table 1, "Cost of Fuel" from the Grade 8 Mathematics Practice Test Reference Materials.

Item 8

This item is about a set of data.

You are going to look for the relationship between the values in a set of data. For example, both values may increase together or one value may increase while the other decreases.

This data table shows the relationship between the number of gallons of fuel purchased and the cost.

Point to the data table as the TTS or TA reads the graphic description.

[Graphic description: "This is a data table titled, 'Cost of Fuel.' It shows three volumes, in gallons, of fuel purchased and the cost, in dollars. Fifteen gallons of fuel costs forty-one dollars. Twenty-five gallons of fuel costs seventy dollars. Thirty-five gallons of fuel costs ninety-six dollars."]

Cost of Fuel

Volume of Fuel (in gallons)	Cost (in dollars)
15	41.00
25	70.00
35	96.00

Item 8, continued

Based on this data, what is the relationship between the volume of fuel purchased and the cost?

Point to the table.

Point to each option as the TTS or TA reads each option.

A.　　The **higher** the number of gallons purchased, the **higher** the cost.

B.　　The **lower** the number of gallons purchased, the **higher** the cost.

C.　　The number of gallons purchased has **no** effect on the cost.

Calculator may be used on this item.

Provide Graph 2, "Tree Growth" from the Grade 8 Mathematics Practice Test Reference Materials.

Item 9

This item is about a line graph.

This graph shows the relationship between the age of a tree and the diameter of its trunk.

Point to the line graph as the TTS or TA reads the graphic description.

[Graphic description: "This is a line graph titled, 'Tree Growth.' The x-axis starts at zero and has five equally spaced marks increasing by tens moving to the right. It is labeled Age in years. The y-axis starts at zero and has five equally spaced marks increasing by tens moving upward. It is labeled Diameter in inches."]

Tree Growth
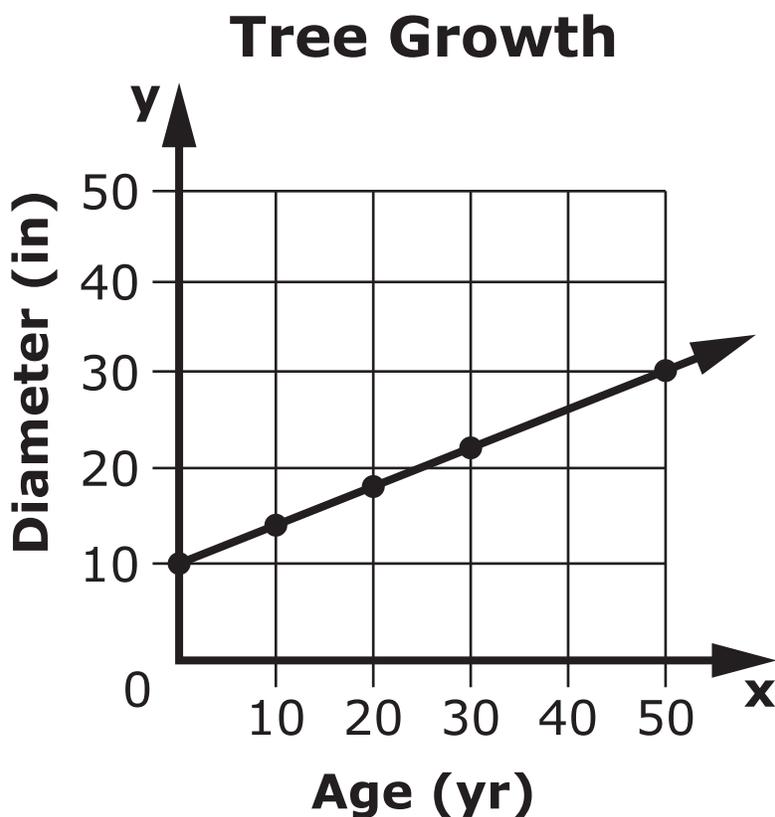
Item 9, continued

Which sentence describes the relationship between the age of a tree and the diameter of its trunk?

Point to each option as the TTS or TA reads each option.

A.   As the age of a tree **decreases**, the diameter of its trunk **increases**.

B.   As the age of a tree **increases**, the diameter of its trunk **increases**.

C.   As the age of a tree **increases**, the diameter of its trunk **decreases**.

Calculator may be used on this item.

Item 10

This item is about recognizing similar rectangles.

Similar rectangles are the same shape, but they are different sizes.

These two rectangles are similar.

> *Point to the rectangles.*
>
> *[For students with visual impairment, read "This is a picture of two rectangles. The first rectangle is two units long and three units wide. The second rectangle is four units long and six units wide."]*
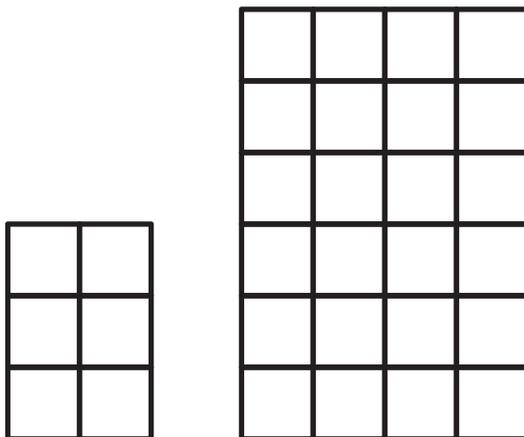
Rectangles are similar when the ratios of the lengths of their corresponding sides are equal.

The length of the first rectangle is 2 units.

> *Point to the length of the small rectangle.*

The length of the second rectangle is 4 units.

> *Point to the length of the large rectangle.*

The length of the second rectangle is 4, which is two times the length of the first rectangle. The ratio is 2 to 1.

The width of the first rectangle is 3 units.

> *Point to the width of the small rectangle.*

Item 10, continued

The width of the second rectangle is 6 units.

> *Point to the width of the large rectangle.*

The width of the second rectangle is 6, which is two times the width of the first rectangle. The ratio is also 2 to 1.

If the ratios are the same for two pairs of corresponding sides, then the rectangles are similar.

This is another rectangle.

> *Point to the 2 × 1 rectangle.*

> *[For students with visual impairment, read "This is a rectangle. It is two units long and one unit wide."]*

Which shape is similar to this rectangle?

> *Point to the 2 × 1 rectangle.*

> *Point to each option.*

> *[For students with visual impairment, read "A. This is a rectangle. It is three units long and two units wide."]*
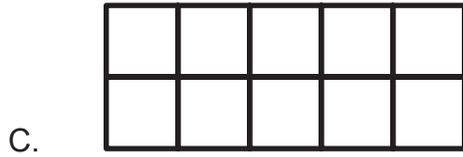
A.
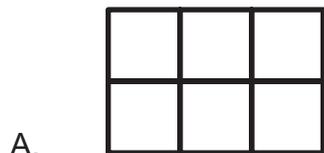
> *[For students with visual impairment, read "B. This is a rectangle. It is four units long and two units wide."]*

B.
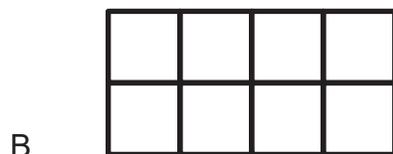
Item 10, continued

[For students with visual impairment, read "C. This is a rectangle. It is five units long and two units wide."]

C.

Calculator may be used on this item.

Provide student with Graph 3, "Songs Learned" from the Grade 8 Mathematics Practice Test Reference Materials.
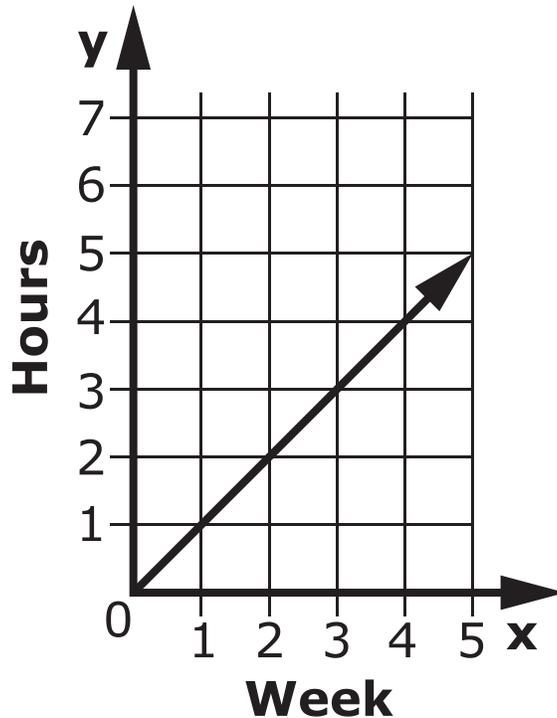
Item 11

This item is about line graphs.

A line graph shows a relationship between two quantities.

This line graph shows the amount of time John spent practicing guitar each week for five weeks.

Point to the line graph as the TTS or TA reads the graphic description.

[Graphic description: "This is a line graph titled, 'John's Practice Time.' The x-axis starts at zero and has five equally spaced marks increasing by ones moving to the right. It is labeled Week. The y-axis starts at zero and has seven equally spaced marks increasing by ones moving upward. It is labeled Hours."]

John's Practice Time

Each week, John spent 1 more hour practicing the guitar than he did the week before.

*Point to the 2 on the "Week" axis and the number 2 on the "Hours" axis.*

Item 11, continued

This is another line graph.

This line graph shows how many songs Paul learned to play on the guitar each week.

Point to the line graph as the TTS or TA reads the graphic description.

[Graphic description: "This line graph is titled, 'Songs Learned.' The x-axis starts at zero and has four equally spaced marks increasing by ones moving to the right. It is labeled Week. The y-axis starts at zero and has four equally spaced marks increasing by ones moving upward. It is labeled Songs."]
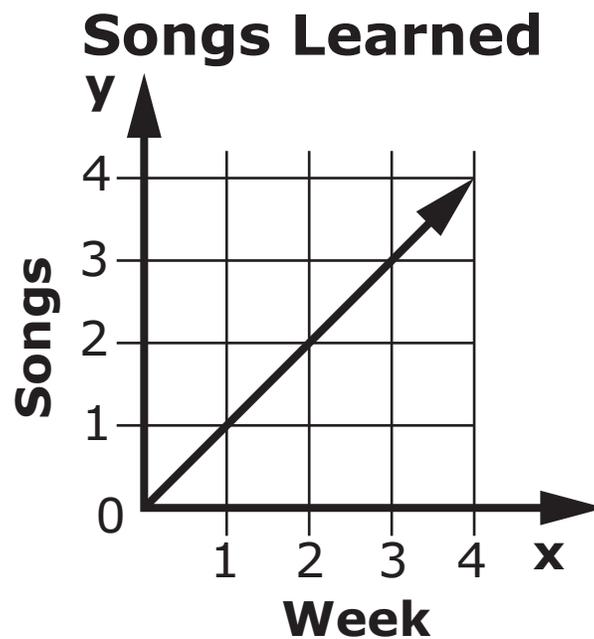
Songs Learned

How did the number of songs Paul learned to play change over time?

Point to the graph, "Songs Learned."

Point to each option as the TTS or TA reads each option.

A.   The number of songs Paul learned stayed the **same** every week.

B.   The number of songs Paul learned **decreased** by 1 every week.

C.   The number of songs Paul learned **increased** by 1 every week.

Calculator may be used on this item.

Provide student with Graph 4, "Lake Water Temperature" from the Grade 8 Mathematics Practice Test Reference Materials.

Item 12

This item is about a set of data.

This is a graph of data collected by a bookstore. The graph shows how many books were sold and the number of hours the store was open for one day.

Point to the graph as the TTS or TA reads the graphic description.

[Graphic description: "This is a graph titled, 'Book Store Sales.' The x-axis starts at zero and has ten equally spaced marks increasing by ones moving to the right. It is labeled Hours. The y-axis starts at zero and has ten equally spaced marks increasing by ones moving upward. It is labeled Number of Books Sold. There are eight points on the graph."]

Bookstore Sales
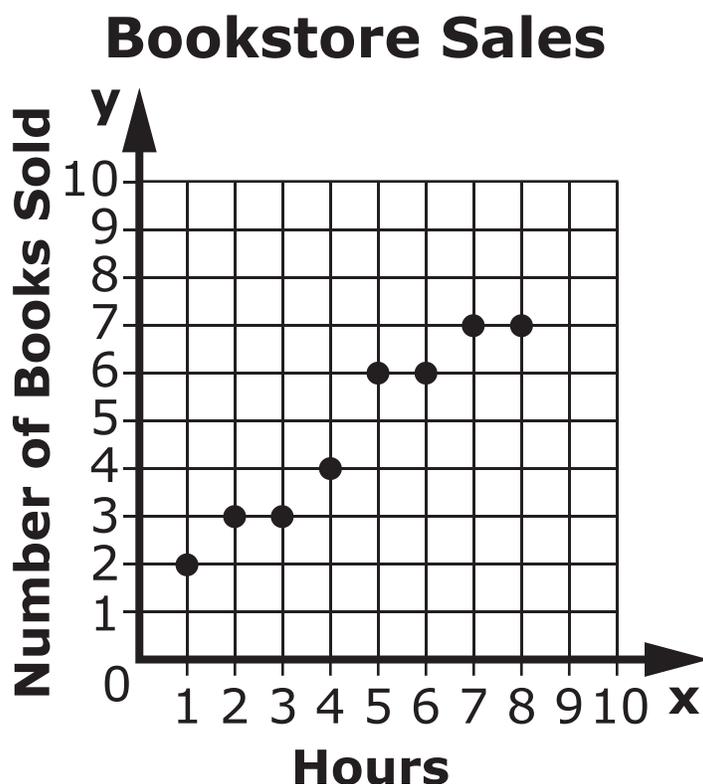
The graph shows the relationship between the number of hours the bookstore was open and the number of books sold for one day. The number of books sold increases as the number of hours increases.

According to the graph, more books were sold as the hours went by.

This is another graph.

This graph shows the water temperatures in a lake at different depths.

Point to the graph as the TTS or TA reads the graphic description.

[Graphic description: "This is a graph titled, 'Lake Water Temperature.' The x-axis starts at zero and has fifteen equally spaced marks increasing by ones moving to the right. It is labeled Depth in meters. The y-axis starts at zero and has twelve equally spaced marks increasing by twos moving upward. It is labeled Temperature in degrees Celsius. There are eight points on the graph."]

Lake Water Temperature
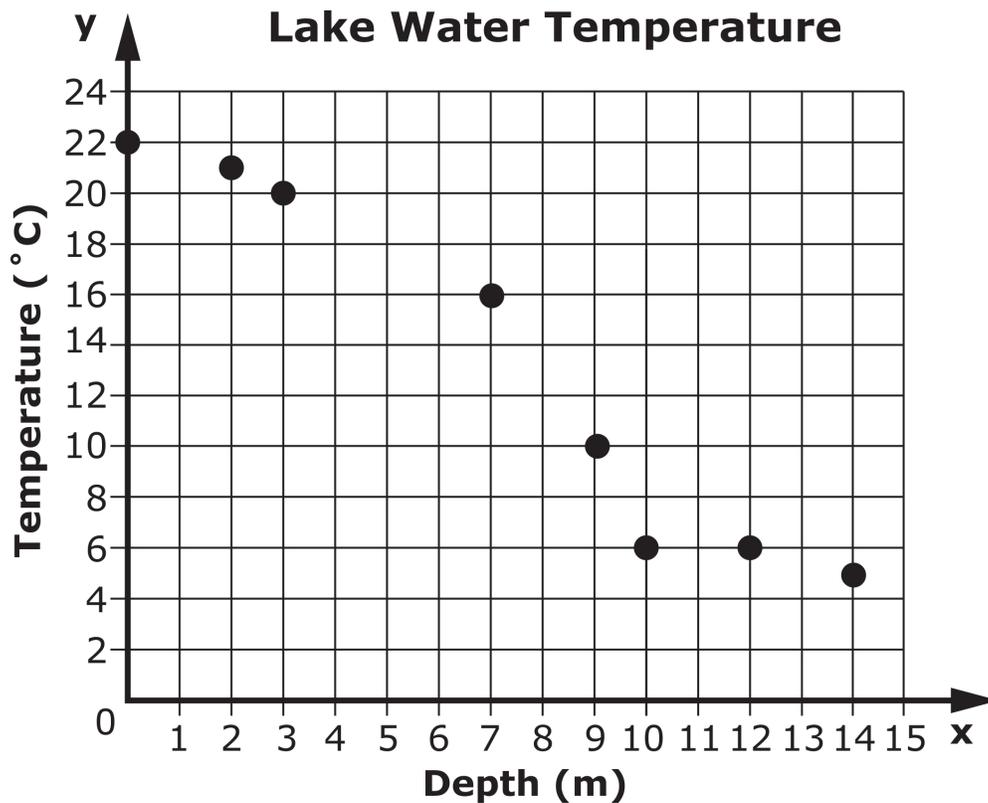
Based on the graph, what is the relationship between the depth of the lake and the temperature of the water?

Point to the graph "Lake Water Temperature."

Point to each option as the TTS or TA reads each option.

A.   The water temperature **decreases** as the depth of the lake **increases**.

B.   The water temperature **decreases** as the depth of the lake **decreases**.

C.   The water temperature **increases** as the depth of the lake **increases**.

Calculator may be used on this item.

Provide student with Formula 1, Volume of a Cylinder from Grade 8 Mathematics Practice Test Reference Materials.
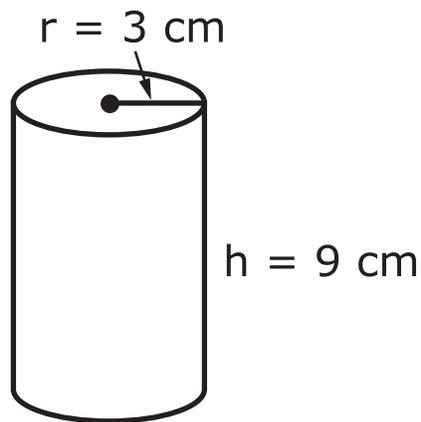
Item 13

This item is about finding the volume of a cylinder.

The volume of a cylinder is the amount of space inside it.

This is a picture of a cylinder.

Point to the picture of the cylinder with a radius of three centimeters.

r = 3 cm

h = 9 cm

$$\text{Volume} = \pi \times \mathbf{r} \times \mathbf{r} \times \mathbf{h}$$

The radius of this cylinder is 3 centimeters.

Point to the radius of the cylinder and its label.

The height of this cylinder is 9 centimeters.

Point to the height if the cylinder and its label.

Item 13, continued

This is the formula for the volume of a cylinder.

Point to the formula as the TTS or TA reads the graphic description.

*[Graphic description: "Volume equals pi times **r** times **r** times **h**."]*

Volume = π × **r** × **r** × **h**

This means the volume of the cylinder is *[Graphic description: "pi"]* π times radius times radius times height.

The volume of the cylinder can be found by putting the numbers for *[Graphic description: "pi"]* π, the cylinder's radius, and the cylinder's height into the formula. Then the numbers are multiplied.

Point to the formula template.

*[Graphic description: "Volume equals pi times **r** times **r** times **h**. Volume equals blank times blank times blank times blank."]*

Volume = π × **r** × **r** × **h**

Volume = _ × _ × _ × _

Use the number *[Graphic description: "three and fourteen hundredths"]* 3.14 for *[Graphic description: "pi"]* π.

Point to the number for π and then to the first blank in the formula template.

[Graphic description: "Pi is about three and fourteen hundredths."]

$$\pi \approx 3.14$$

Then, the numbers for the radius and the height go into the formula. The radius is 3 centimeters, so the number 3 goes in the second and third blanks.

Point to the cylinder's radius and then to the second and third blanks in the formula template.

Item 13, continued

Then, the number for the height, 9, goes into the last blank.

Point to the cylinder's height and then to the last blank in the formula template.

The numbers are multiplied to get the cylinder's volume.

Calculate the volume using a calculator and show the result to the student.

The cylinder's volume is *[Graphic description: "two hundred fifty-four and thirty-four hundredths"]* 254.34 cubic centimeters.

This is a picture of another cylinder. The radius of this cylinder is 4 centimeters. The height is 7 centimeters.

Point to the picture of the cylinder with a radius of 4 centimeters.

r = 4 cm

h = 7 cm
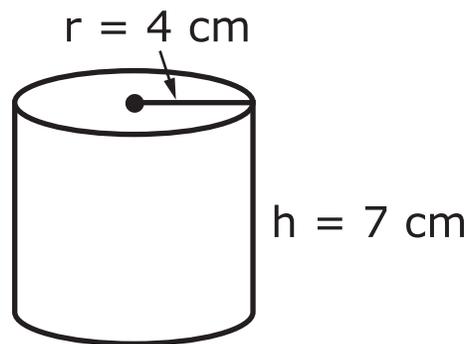
This formula is used to find the volume of a cylinder.

Point to the formula and to the cylinder with a radius of 4 centimeters.

*[Graphic description: "Volume equals pi times **r** times **r** times **h**. Volume equals blank times blank times blank times blank."]*

$$\text{Volume} = \pi \times \mathbf{r} \times \mathbf{r} \times \mathbf{h}$$

$$\text{Volume} = \_ \times \_ \times \_ \times \_$$

Item 13, continued

What is the volume of this cylinder?

Point to the picture of the cylinder with a radius of 4 centimeters.

Point to each option as the TTS or TA reads each graphic description.

[Graphic description: "A. twenty-one cubic centimeters"]

A.   21.0 cu. cm

[Graphic description: "B. eighty-seven and ninety-two hundredths cubic centimeters"]

B.   87.92 cu. cm

[Graphic description: "C. three hundred fifty-one and sixty-eight hundredths cubic centimeters"]

C.   351.68 cu. cm

Calculator may be used on this item.

Provide student with Graph 5, "Game Rentals" from the Grade 8 Mathematic Practice Test Reference Materials.

Item 14

This item is about a line graph.

This line graph shows the relationship between the number of games rented and the total cost.

> *Point to the graph as the TTS or TA reads the graphic description.*
>
> *[Graphic description: "This is a line graph titled, 'Game Rentals.' The x-axis starts at zero and has six equally spaced marks increasing by ones moving to the right. It is labeled Number of Games Rented. The y-axis starts at zero and has eight equally spaced marks increasing by ones moving upward. It is labeled Total Cost in dollars."]*

Game Rentals
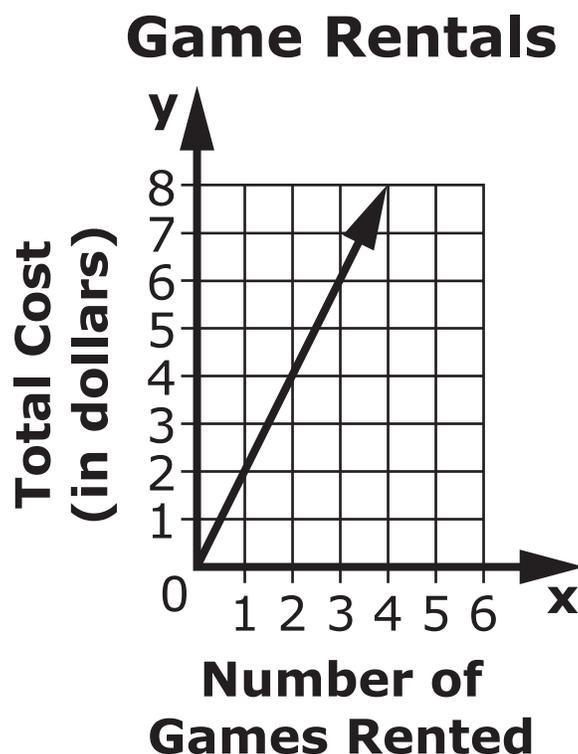
According to the graph, what happened to the total cost as more games were rented?

> *Point to each option as the TTS or TA reads each option.*

A.   The total cost **increased**.

Item 14, continued

      B.   The total cost **decreased**.

      C.   The total cost stayed the **same**.

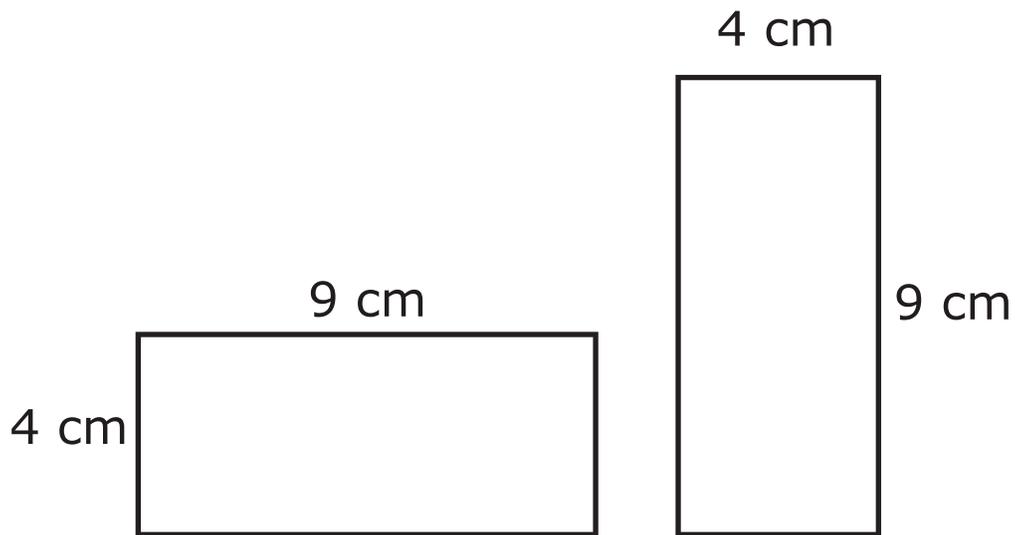*Calculator may be used on this item.*

Item 15

This item is about recognizing congruent rectangles.

Rectangles are congruent when they are the same shape and the same size.

These two rectangles are congruent.

> *Point to the pair of rectangles.*

The first rectangle is 9 centimeters long by 4 centimeters wide.

> *Point to the rectangle on the left.*

The second rectangle is 4 centimeters long by 9 centimeters wide.

> *Point to the rectangle on the right.*

These two rectangles are the same size and the same shape. That means they are congruent.

Item 15, continued

This is another rectangle.

Point to the rectangle.

[For students with visual impairment, read "This is a rectangle. It is twelve centimeters long and three centimeters wide."]
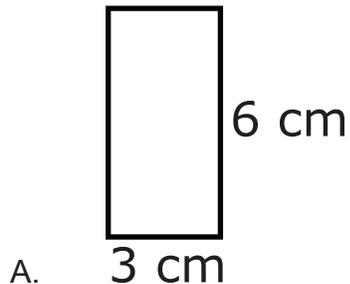
12 cm

3 cm
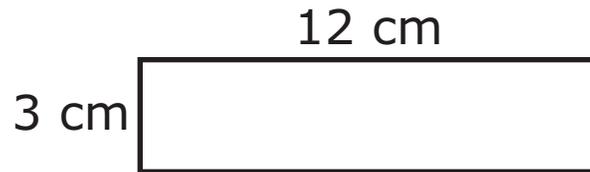
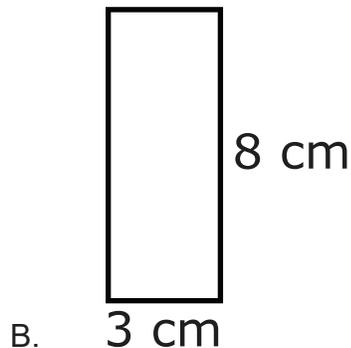Which shape is congruent to this rectangle?

Point to the 12 x 3 rectangle.

Point to each option as the TTS or TA reads each graphic description.

[Graphic description: "A. This is a rectangle. It is three centimeters long and six centimeters wide."]
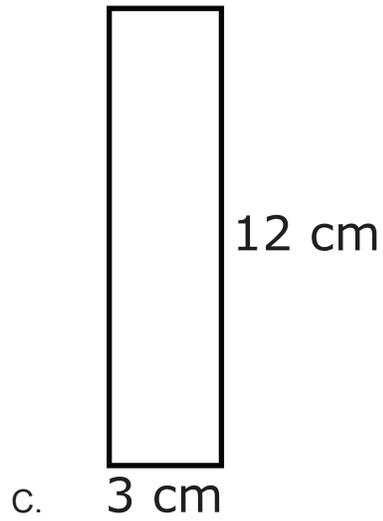
6 cm

A.   3 cm

[Graphic description: "B. This is a rectangle. It is three centimeters long and eight centimeters wide."]

8 cm

B.   3 cm

Item 15, continued

12 cm

c.   3 cm

Calculator may be used on this item.

Provide student with Graph 6, "Graph B" from the Grade 8 Mathematics Practice Test Reference Materials.

Item 16

This item is about finding the y-intercept of a line.

The y-intercept is the point where a line crosses the y-axis and **x** equals 0.

This is a line graph.

> *Point to graph A as the TTS or TA reads the graphic description.*
>
> *[Graphic description: "This is a line graph titled, 'Graph A.' The x-axis starts at zero and has six equally spaced marks increasing by ones moving to the right. The y-axis starts at zero and has six equally spaced marks increasing by ones moving upward."]*
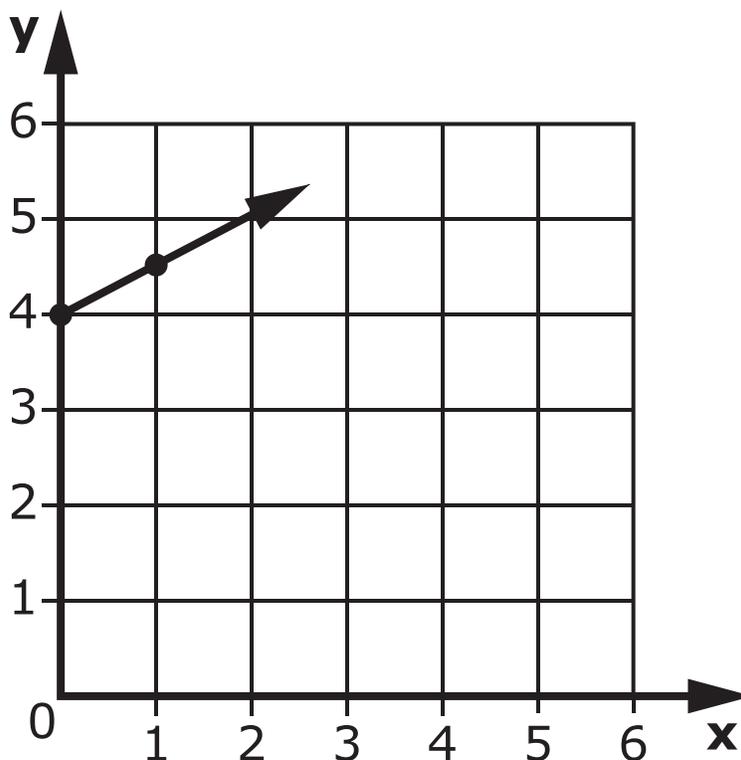
Graph A

Item 16, continued

The line crosses the y-axis where **y** equals 4 and **x** equals 0. The y-intercept of this line is point (0, 4).

Point to the y-intercept on Graph A.

Write the value of **x** first, then write the value of **y**.

Point to and read the ordered pair.

(0, 4)

This is another graph. Look carefully at this line graph to find the y-intercept.

Point to Graph B as the TTS or TA reads the graphic description.

[Graphic description: "This is a line graph titled, Graph B. The x-axis starts at zero and has ten equally spaced marks increasing by ones moving to the right. The y-axis starts at zero and has ten equally spaced marks increasing by ones moving upward."]
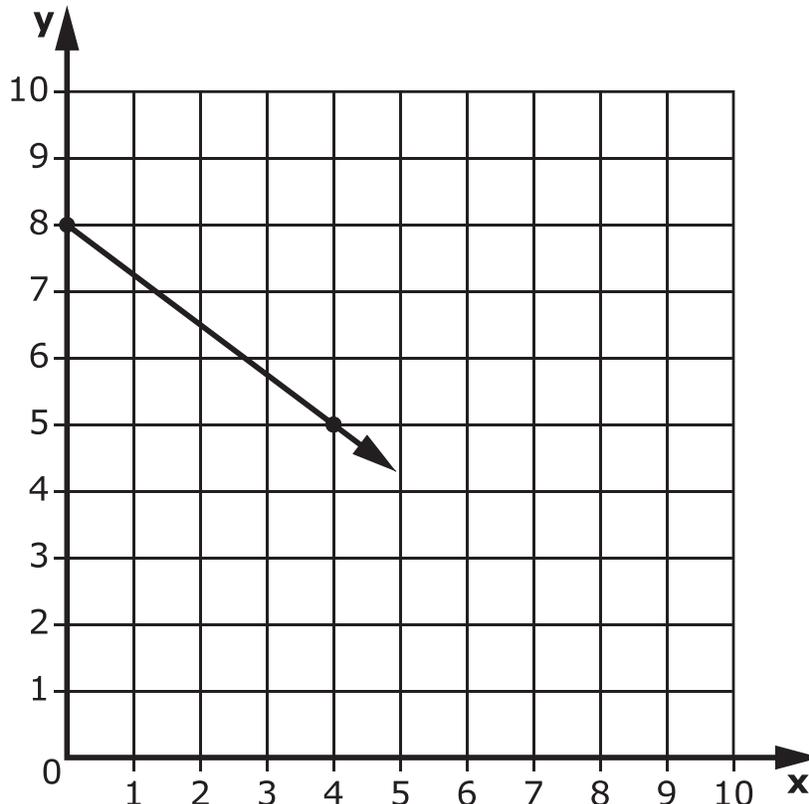
Graph B

Item 16, continued

What is the y-intercept of this line?

Point to the line on Graph B.

Point to each option as the TTS or TA reads each option.

A.   (8, 0)

B.   (0, 8)

C.   (4, 5)

Calculator may be used on this item.

Item 17

This item is about solving an equation with a scale.

This is a picture of a scale.

> *Point to the picture of the scale.*
>
> *[For students with visual impairment, read "This is a picture of a pan balance scale. The bar and pans on the scale are balanced. The left pan contains three pyramids of unknown weight. The right pan contains six cylinders that weigh one unit each."]*
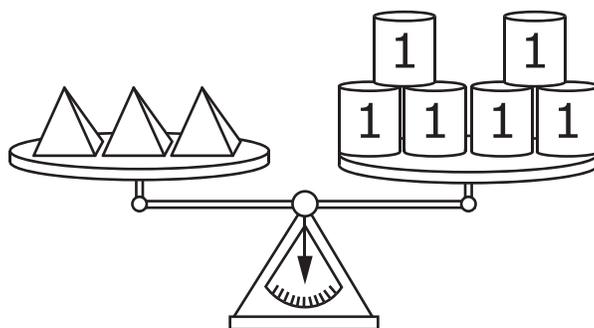
This scale is balanced. The total weight of the shapes on the left side is equal to the total weight of the shapes on the right side.

> *Point to each pan in the picture.*

Each cylinder weighs 1 unit. The weight of the pyramids is not known.

> *Point to each cylinder and pyramid in the picture.*

Use this equation to find out how much 1 pyramid weighs. A letter, such as the letter **p**, can be used in place of a number.
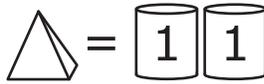
> *Point to the graphic organizer as the TTS or TA reads the graphic description.*
>
> *[Graphic description: "Three pyramids equal six one-unit cylinders. Three **p** equals six units. One pyramid equals two one-unit cylinders. **p** equals two units."]*

$$\triangle\triangle\triangle = \boxed{1}\boxed{1}\boxed{1}\boxed{1}\boxed{1}\boxed{1}$$

$$3p = 6 \text{ units}$$

$$\triangle = \boxed{1}\boxed{1}$$
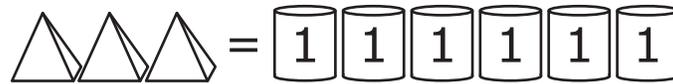
$$p = 2 \text{ units}$$

Three pyramids weigh the same amount as 6 cylinders. To find out what 1 pyramid, **p**, weighs, divide each side of the equation by 3. One pyramid weighs 2 units.

This is a picture of another scale.

Point to the picture of a scale.

[For students with visual impairment, read "This is a picture of a pan balance scale. The bar and pans on the scale are balanced. The left pan contains two rods of unknown weight. The right pan contains ten cubes that weigh one unit each."]
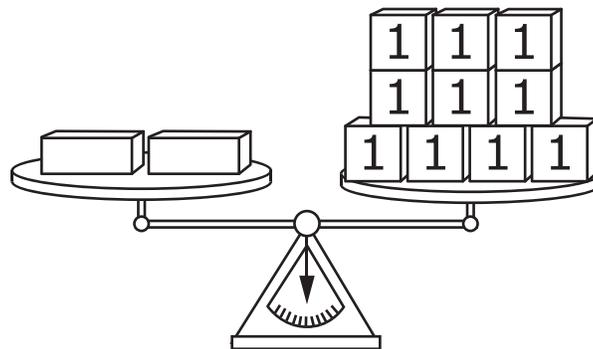
Use this equation to answer the question.

Point to the equation as the TTS or TA reads the graphic description.

*[Graphic description: "two **r** equals ten units"]*

$$2r = 10 \text{ units}$$

Item 17, continued

How many units does one rod [rod image] weigh?

Point to each option as the TTS or TA reads each option.

A. 2 units

B. 5 units

C. 12 units

Calculator may be used on this item.

Item 18

This item is about locating numbers on a number line.

This is *[Graphic description: "square root of twenty-seven"]* $\sqrt{27}$.

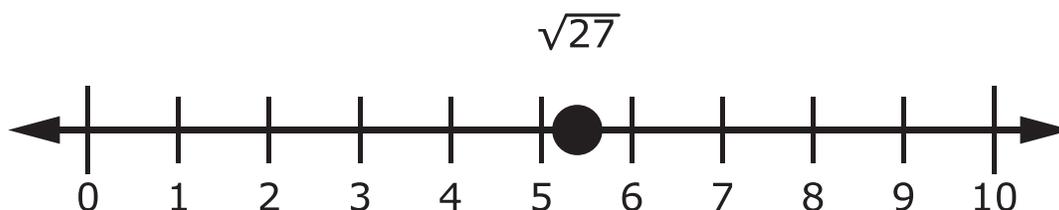   *Point to the symbol for the square root of twenty-seven.*

$$\sqrt{27}$$

The value of *[Graphic description: "square root of twenty-seven"]* $\sqrt{27}$ is about *[Graphic description: "five and two tenths"]* 5.2.

Use the number *[Graphic description: "five and two tenths"]* 5.2 to find the approximate location of *[Graphic description: "square root of twenty-seven"]* $\sqrt{27}$ on the number line.

The approximate location of *[Graphic description: "square root of twenty-seven"]* $\sqrt{27}$ is between the numbers 5 and 6 on the number line.

   Point to the dot under $\sqrt{27}$ the on the number line.

   [Graphic description: "This is a number line beginning at zero on the left, followed by ten equally spaced marks, and ending at ten on the right. There is a point between the five and six that is labeled the square root of twenty-seven."]

This is *[Graphic description: "square root of forty-four"]* $\sqrt{44}$.

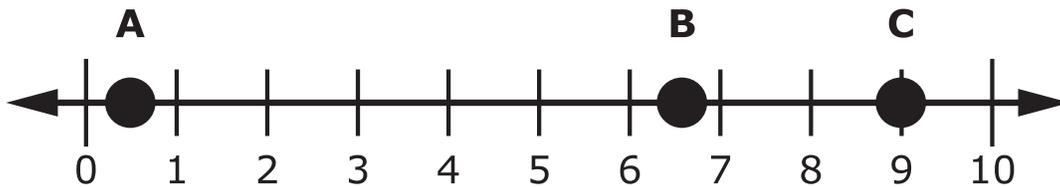   *Point to the symbol for the square root of forty-four.*

$$\sqrt{44}$$

The *[Graphic description: "square root of forty-four"]* $\sqrt{44}$ is about *[Graphic description: "six and six tenths"]* 6.6.

This is another number line. Each letter is a point on the number line.

Point to the number line as the TTS or TA reads the graphic description.

[Graphic description: "This is a number line beginning at zero on the left, followed by ten equally spaced marks, and ending at ten on the right. There are three labeled points on the number line. Point A is located between zero and one. Point B is located between six and seven. Point C is located at nine."]

Which point shows the approximate location of *[Graphic description: "square root of forty-four"]* $\sqrt{44}$ on the number line?

Point to each option as the TTS or TA reads each option.

A.   point A

B.   point B

C.   point C

Calculator may be used on this item.
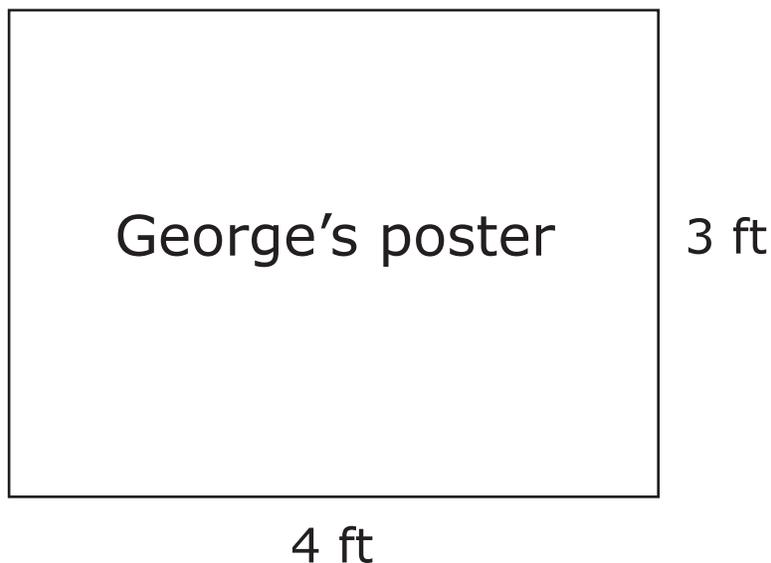
Item 19

This item is about using area to solve a problem.

The area of a rectangle is the space inside it.

George's poster is a rectangle. The poster is 4 feet long and 3 feet wide. This is a picture of George's poster.

Point to the dimensions of George's poster as the TTS or TA reads the graphic description.

[Graphic description: "Area equals length times width. Area equals four times three."]

```
┌─────────────────────────────┐
│                             │
│                             │
│      George's poster        │   3 ft
│                             │
│                             │
└─────────────────────────────┘
            4 ft
```

Area = Length × Width
Area = 4 × 3

The area of George's poster can be found by multiplying *[Graphic description: "four times three"]* 4 × 3.

The area of George's poster is 12 square feet.

Item 19, continued

George changed the length of his poster. Now his poster is 2 feet long and 3 feet wide.

Point to the dimensions of George's new poster.

George's new poster

3 ft

2 ft

How did the area of George's poster change?

Point to the picture of George's old poster and George's new poster.

Point to each option as the TTS or TA reads each option.

A.   The area of the poster **increased**.

B.   The area of the poster **decreased**.

C.   The area of the poster stayed the **same**.

Calculator may be used on this item.

Provide student with Table 1, "Paper Recycling" and incomplete graph from the Grade 8 Mathematics Practice Test Reference Materials and markers, pencils, or counters.

Item 20

This item is about graphing a set of data.

This data table shows how many pounds of paper a classroom collected and recycled each month for four months.

Point to the data table as the TTS or TA reads the graphic description.

[Graphic description: "This is a data table titled, 'Paper Recycling.' It shows four months and the pounds of paper recycled each of those months. In month one, two pounds of paper were recycled. In month two, four pounds of paper were recycled. In month three, six pounds of paper were recycled. In month four, twelve pounds of paper were recycled."]

Paper Recycling

| Month	Pounds of Paper
1	2
2	4
3	6
4	12

These ordered pairs can be plotted on a graph.

Item 20, continued

This graph shows the first three ordered pairs already plotted.

Point to the graph as the TTS or TA reads the graphic description.

[Graphic description: "This is a graph titled, 'Paper Recycling.' The x-axis starts at zero and has seven equally spaced marks increasing by ones moving to the right. It is labeled Month. The y-axis starts at zero and has nine equally spaced marks increasing by twos moving upward. It is labeled Pounds of Paper. There are three points on the graph."]

Paper Recycling
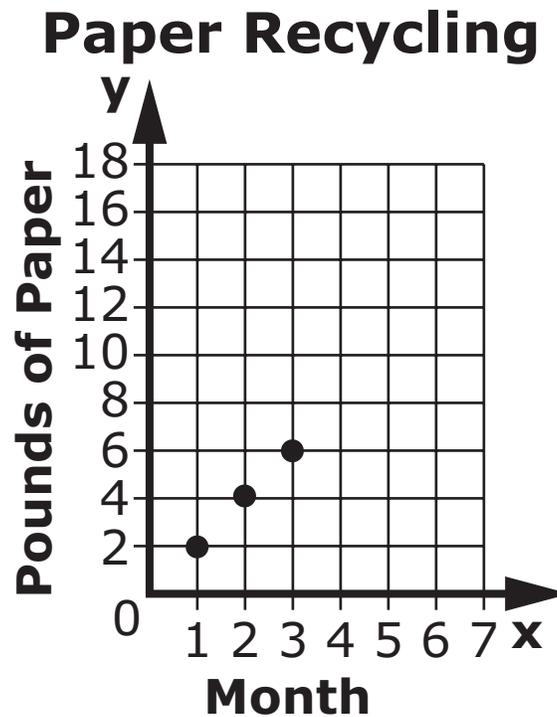
The first ordered pair is (1, 2).

Point to the first ordered pair (1, 2) in the data table.

This is the point (1, 2) on the graph.

Point to the point (1, 2) in the graph.

The second ordered pair is (2, 4).

Point to the second ordered pair (2, 4) in the data table.

This is the point (2, 4) on the graph.

Point to the point (2, 4) in the graph.

Item 20, continued

The third ordered pair is (3, 6).

Point to the third ordered pair (3, 6) in the data table.

This is the point (3, 6) on the graph.

Point to the point (3, 6) in the graph.

Now plot the last ordered pair on this graph.

Present the student with the incomplete graph and instructional materials (e.g., markers, pencils, small objects such as counters), and place the materials onto the work surface in front of the student.

Where does the last ordered pair in the data table go on the graph?

Allow the student time to complete the graph.

Rubric

Test Administrator: After student completes work, record on the computer if the student provided the correct answer or the student did not provide the correct answer.

Score	Description
1	Student correctly plots the ordered pair on the graph.
0	Student does not correctly plot the ordered pair on the graph.

Item 20, continued

Sample Response

Paper Recycling
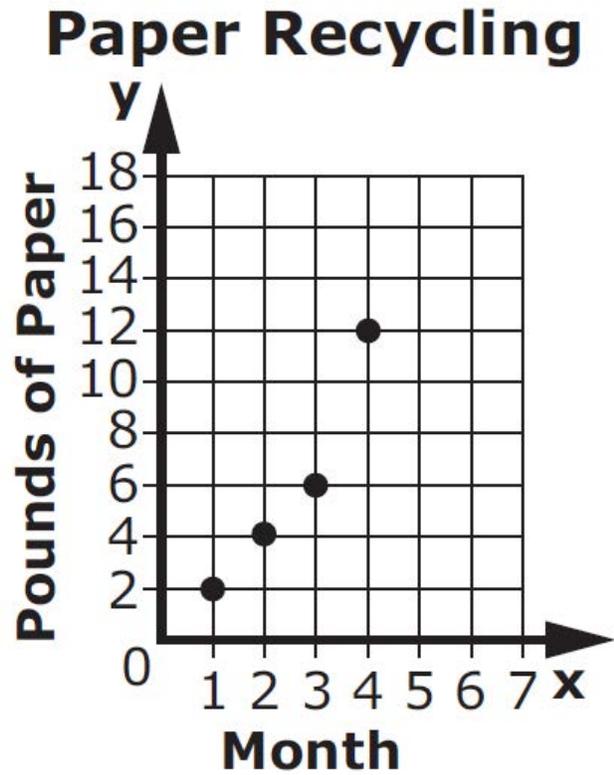
You have reached the end of this Session.

You may choose from the following options:

- Review items in this session
- **Pause** this test and **Resume** later
- Complete this session (**End Test**, then **Submit**) and begin Session 2.

Session 2

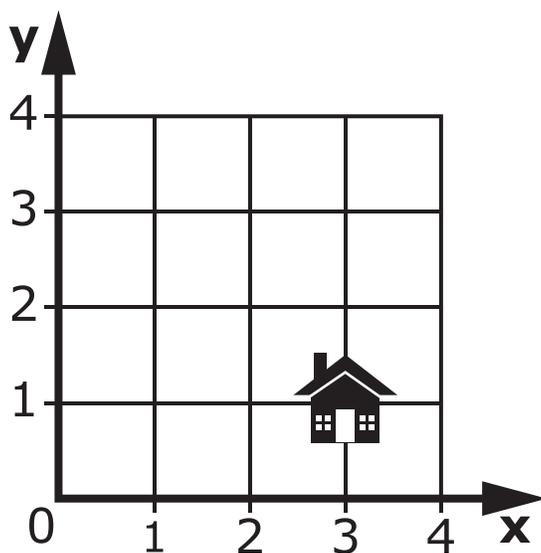*Calculator may be used on this item.*

Item 21

This item is about locating a point on a grid.

This is a map on a grid. It shows a house.

Point to the graph as the TTS or TA reads the graphic description.

[Graphic description: "This is a grid. The x-axis starts at zero and has four equally spaced marks increasing by ones moving to the right. The y-axis starts at zero and has four equally spaced marks increasing by ones moving upward. A house's location is shown on the grid."]

Which point shows the location of the house on the grid?

Point to the house.

Point to each option as the TTS or TA reads each graphic description.

[Graphic description: "A. This is a grid. The x-axis starts at zero and has four equally spaced marks increasing by ones moving to the right. The y-axis starts at zero and has four equally spaced marks increasing by ones moving upward. There is a point on the graph located at the coordinates three, one."]

A.

(3, 1)
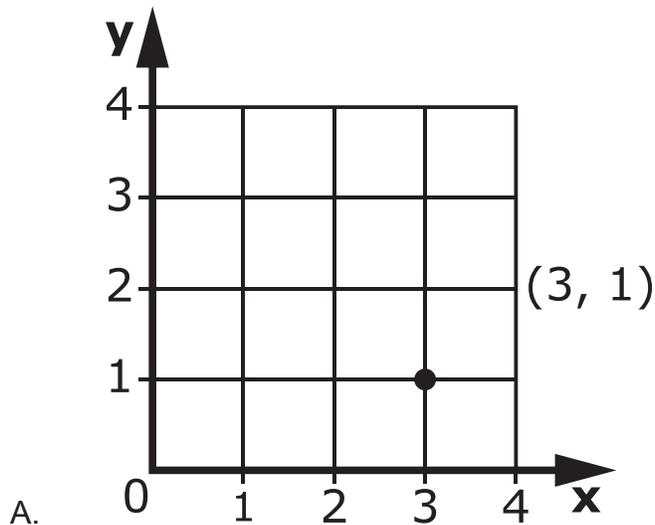
[Graphic description: "B. This is a grid. The x-axis starts at zero and has four equally spaced marks increasing by ones moving to the right. The y-axis starts at zero and has four equally spaced marks increasing by ones moving upward. There is a point on the graph located at the coordinates one, three."]

B.
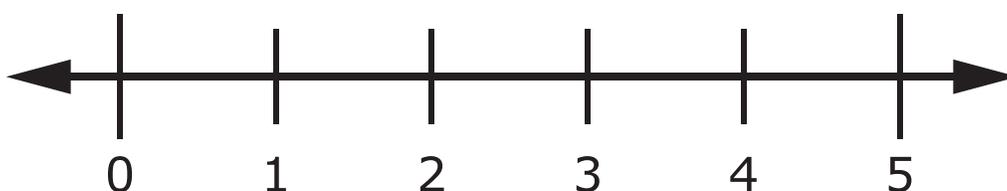
(1, 3)
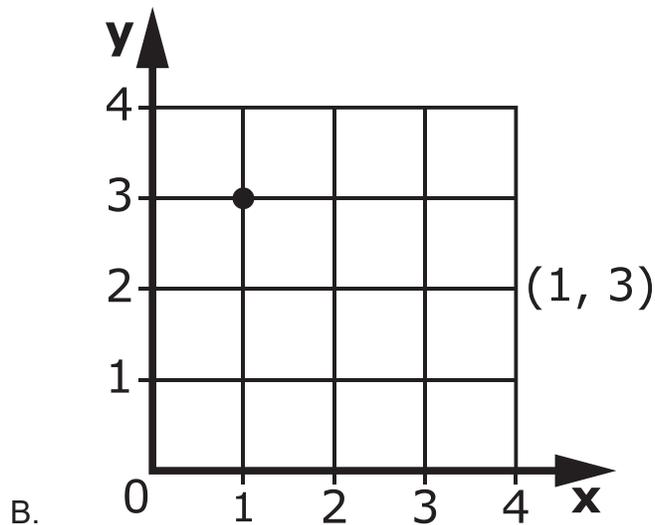
Calculator may be used on this item.

Item 22

This item is about finding numbers on a number line.

This is a number line.

Trace the number line with one finger as the TTS or TA reads the graphic description.

[Graphic description: "This is a number line beginning at zero on the left, followed by five equally spaced marks, ending at five on the right."]

This number line shows all the whole numbers from 0 to 5. Many other numbers lie between these whole numbers.

This is an example of a number that lies between two whole numbers.

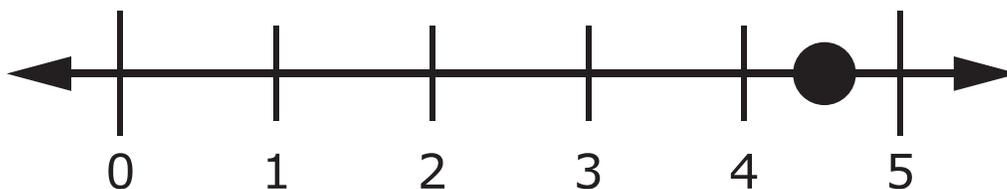*Point to the number five tenths as the TTS or TA reads the graphic description.*

[Graphic description: "five tenths"]

0.5

Where does *[Graphic description: "five tenths"]* 0.5 belong on the number line?

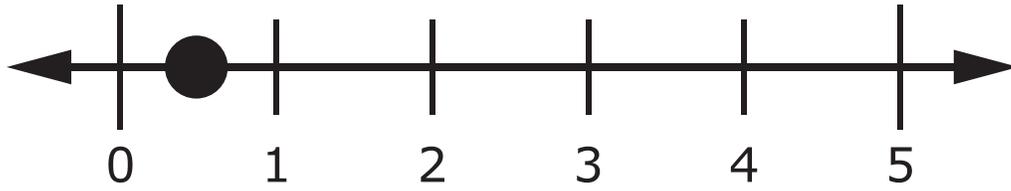*Point to each option as the TTS or TA reads the graphic description.*

[Graphic description: "A. between four and five"]

A.   between four and five

Item 22, continued

[Graphic description: "B. between zero and one"]

B.   between zero and one

Calculator may be used on this item.

Provide student with Graph 7, "Bicycles Built" from the Grade 8 Mathematics Practice Test Reference Materials.
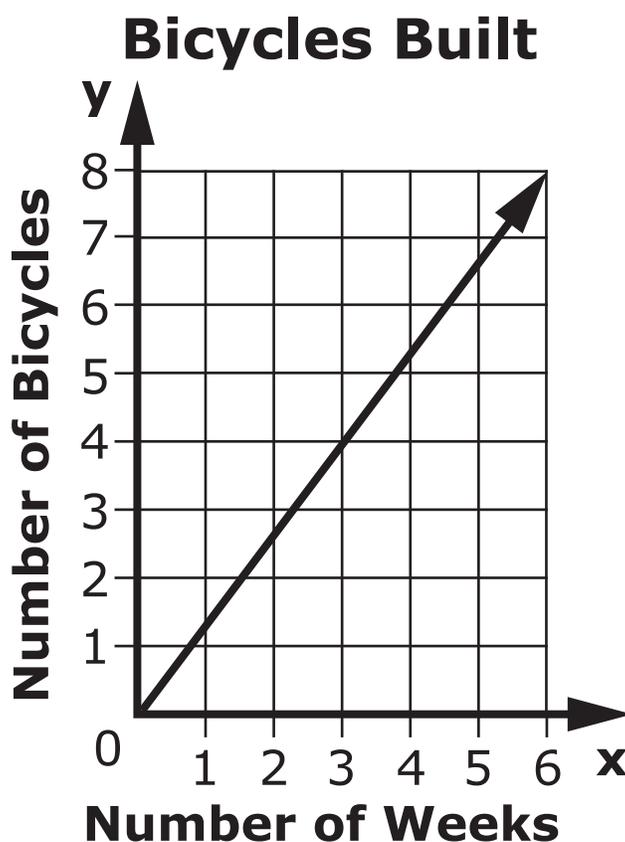
Item 23

This item is about a line graph.

This graph shows the relationship between the number of weeks and the total number of bicycles built by a bicycle shop.

Point to the graph as the TTS or TA reads the graphic description.

[Graphic description: "This is a line graph titled, 'Bicycles Built.' The x-axis starts at zero and has six equally spaced marks increasing by ones moving to the right. It is labeled Number of Weeks. The y-axis starts at zero and has eight equally spaced marks increasing by ones moving upward. It is labeled Number of Bicycles."]

Bicycles Built

Item 23, continued

How many weeks does the shop need to build more than 6 bicycles?

Point to the location on the graph that represents each option as the TTS or TA reads each option.

A.   less than 3 weeks

B.   more than 3 weeks

Calculator may be used on this item.
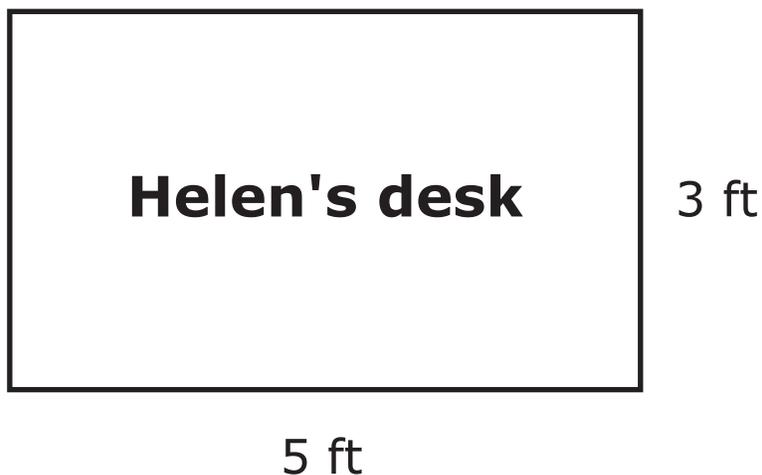
Item 24

This item is about using area to solve a problem.

The area of a rectangle is the space inside it.

The top of Helen's desk is a rectangle. The desk is 5 feet long and 3 feet wide. This is a picture of the top of Helen's desk.

> *Point to the dimensions of Helen's desktop as the TTS or TA reads the graphic description.*
>
> *[Graphic description: "Area equals length times width. Area equals five times three."]*

Helen's desk   3 ft

5 ft

Area = Length × Width
Area = 5 × 3

The area of the top of Helen's desk can be found by multiplying *[Graphic description: "five times three"]* 5 × 3.

The area of the top of Helen's desk is 15 square feet.

Helen bought a new desk. Now the top of her desk is 6 feet long and 3 feet wide.

Point to the dimensions of Helen's new desktop.

Helen's new desk   3 ft

6 ft

How did the area of the top of Helen's desk change?

Point to the picture of Helen's old desk and Helen's new desk.

Point to each option as the TTS or TA reads each option.

A.   The area of the desk **increased**.

B.   The area of the desk **decreased**.

C.   The area of the desk stayed the **same**.

Calculator may be used on this item.

Provide student with Formula 2, Volume of a Cylinder from the Grade 8 Mathematics Practice Test Reference Materials.
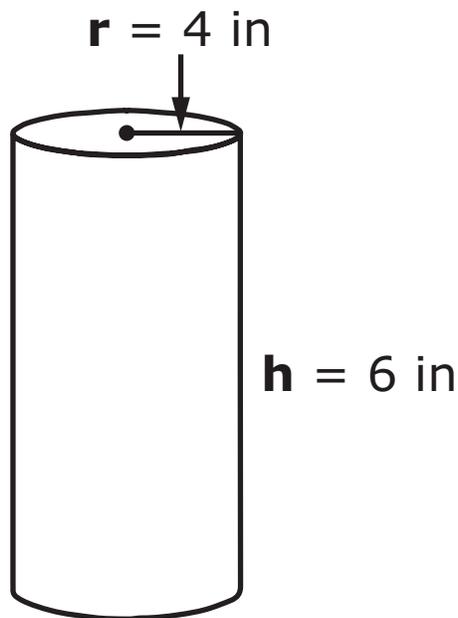
Item 25

This item is about finding the volume of a cylinder.

The volume of a cylinder is the amount of space inside it.

This is a picture of a cylinder.

> *Point to the picture of the cylinder.*

> *[Graphic description: "Volume equals pi times **r** times **r** times **h**."]*

r = 4 in

h = 6 in

Volume = π × **r** × **r** × **h**

This is the formula to find the volume of a cylinder.

> *Point to the formula under the cylinder.*

Item 25, continued

Use the number *[Graphic description: "three and fourteen hundredths"]* 3.14 for *[Graphic description: "pi"]* π .

Point to the symbol π *in the formula.*

The radius of the cylinder is 4 inches.

Point to the radius.

The height of the cylinder is 6 inches.

Trace the height of the cylinder.

Use the formula to find the volume of the cylinder.

Point to the formula template as the TTS or TA reads the graphic description.

*[Graphic description: "Volume equals pi times **r** times **r** times **h**. Volume equals blank times blank times blank times blank."]*

Volume = π × r × r × h
Volume = _ × _ × _ × _

What is the volume of this cylinder?

Point to the cylinder.

Point to each option as the TTS or TA reads each graphic description.

[Graphic description: "A. twenty-four cubic inches"]

A.   24 cu. in

[Graphic description: "B. Three hundred one and forty-four hundredths cubic inches"]

B.   301.44 cu. in

Item 25, continued

[Graphic description: "C. Four hundred fifty-two and sixteen hundredths cubic inches"]

C.   452.16 cu. in

Calculator may be used on this item.

Item 26

This item is about solving an equation with a variable.

A variable is a letter that can be used in place of an unknown number.

This is an equation with a variable.

> *Point to the equation as the TTS or TA reads the graphic description.*
>
> *[Graphic description: "three times **p** equals twelve"]*

$$3 \times \mathbf{p} = 12$$

In this equation, the letter **p** is a variable.

> *Point to the letter **p** in the equation.*

Solve the equation to find out what the letter **p** equals in the equation.

One way to solve the equation is to divide each side by 3.

> *Point to the solution equation as the TTS or TA reads the graphic description.*
>
> *[Graphic description: "**p** equals four."]*

$$\mathbf{p} = 4$$

This is another equation with a variable.

> *Point to the equation as the TTS or TA reads the graphic description.*
>
> *[Graphic description: "eight times **n** equals forty-eight"]*

$$8 \times \mathbf{n} = 48$$

Item 26, continued

In this equation, the letter **n** is a variable.

*Point to the letter **n** in the equation.*

What number does **n** equal in the equation?

Point to each option as the TTS or TA reads each option.

A.   6

B.   40

C.   54

Calculator may be used on this item.

Provide student with Formula 3, Area of a Rectangle from the Grade 8 Mathematics Practice Test Reference Materials.

Item 27

This item is about using area to solve a problem.

The area of a rectangle is the space inside it.

Jamie's mirror is a rectangle. The mirror is 5 inches long and 6 inches wide. This is a picture of Jamie's mirror.

> *Point to the dimensions of Jamie's mirror. Point to the formula as the TTS or TA reads the graphic description."*
>
> *[Graphic description: "Area equals length times width. Area equals five times six."]*

Jamie's Mirror
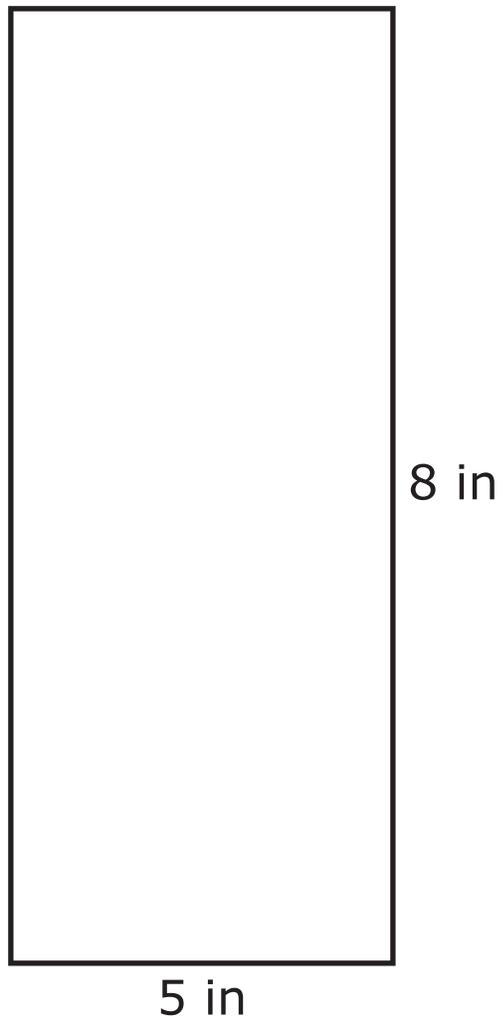
6 in

5 in
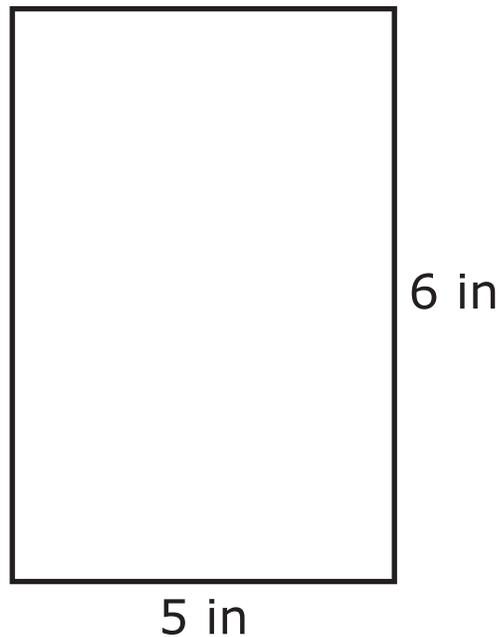
Area = Length × Width

Area = 5 × 6

The area of Jamie's mirror can be found by multiplying *[Graphic description: "five times six"]* 5 × 6.

The area of Jamie's mirror is 30 square inches.

Jamie received a new mirror. Her new mirror is 5 inches long and 8 inches wide.

Point to the picture of Jamie's new mirror.

Jamie's New Mirror

8 in

5 in

Item 27, continued

Use the formula to calculate the area of Jamie's new mirror.

Point to the formula as the TTS or TA reads the graphic description.

[Graphic description: "Area equals length times width. Area equals blank times blank."]

Area = Length × Width
Area = _ × _

The length of the new mirror is 5 inches.

Trace the length of Jamie's new mirror.

The width of the new mirror is 8 inches.

Trace the width of Jamie's new mirror.

To find the area of Jamie's new mirror, multiply the length and the width.

Point to the equation as the TTS or TA reads the graphic description.

[Graphic description: "five times eight equals"]

5 × 8 =

The area of Jamie's new mirror can be found by multiplying *[Graphic description: "five times eight"]* 5 × 8.

The area of Jamie's old mirror was 30 square inches. Her new mirror has an area of 40 square inches.

How did the area of Jamie's mirror change?

Point to each option as the TTS or TA reads each option.

A.   The area of the mirror **increased** by 10 square inches.

B.   The area of the mirror **decreased** by 10 square inches.

Item 27, continued

    C.   The area of the mirror stayed the **same** 30 square inches.

Calculator may be used on this item.

Provide student with Data Table 2, "Ticket Sales" from the Grade 8 Mathematics Practice Test Reference Materials.

Item 28

This item is about a set of data.

The art gallery organized a showing of students' art work. The data table shows the number of tickets sold and the amount of money collected.

Point to the data table as the TTS or TA reads the graphic description.

[Graphic description: "This is a data table titled, 'Ticket Sales.' It shows the number of tickets sold and the amount of money collected in dollars. When one ticket was sold, two dollars were collected. When four tickets were sold, eight dollars were collected. When eight tickets were sold, sixteen dollars were collected."]

Ticket Sales

Tickets Sold	Money Collected (in dollars)
1	2
4	8
8	16

Based on these data, what is the relationship between the number of tickets sold and the amount of money collected?

Point to the data table.

Point to each option as the TTS or TA reads each option.

A.   When **fewer** tickets were sold, **more** money was collected.

B.   When **more** tickets were sold, **less** money was collected.

Item 28, continued

    C.   When **more** tickets were sold, **more** money was collected.

Calculator may be used on this item.

Provide student with Graph 8, "Graph B" from the Grade 8 Mathematics Practice Test Reference Materials.
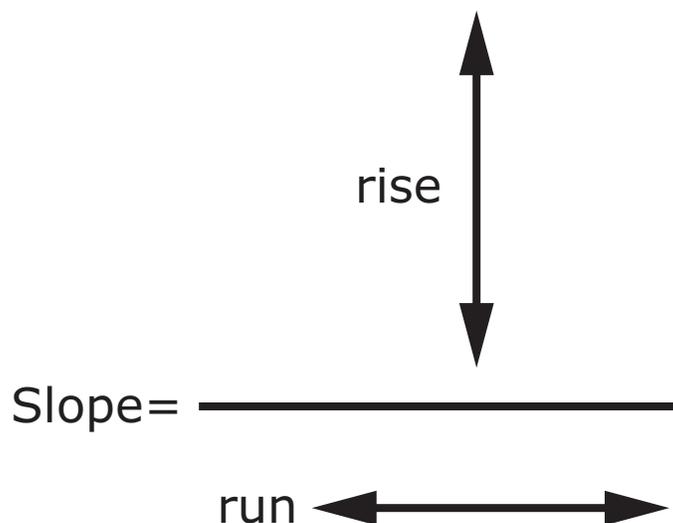
Item 29

This item is about finding the slope of a line.

The slope is the rise over the run. Slope can be written as a fraction.

> *Point to the slope equation as the TTS or TA reads the graphic description.*

> *[Graphic description: "Slope equals rise over run."]*

$$\text{Slope} = \frac{\text{rise}}{\text{run}}$$

Item 29, continued

This is a line graph.

Point to Graph A as the TTS or TA reads the graphic description.

[Graphic description: "This is a line graph titled, 'Graph A.' The x-axis starts at zero and has six equally spaced marks increasing by ones moving to the right. The y-axis starts at zero and has six equally spaced marks increasing by ones moving upward."]

Graph A

y

6

5

4 — (3, 4)

3

2

1

(0, 0)

0   1   2   3   4   5   6   x
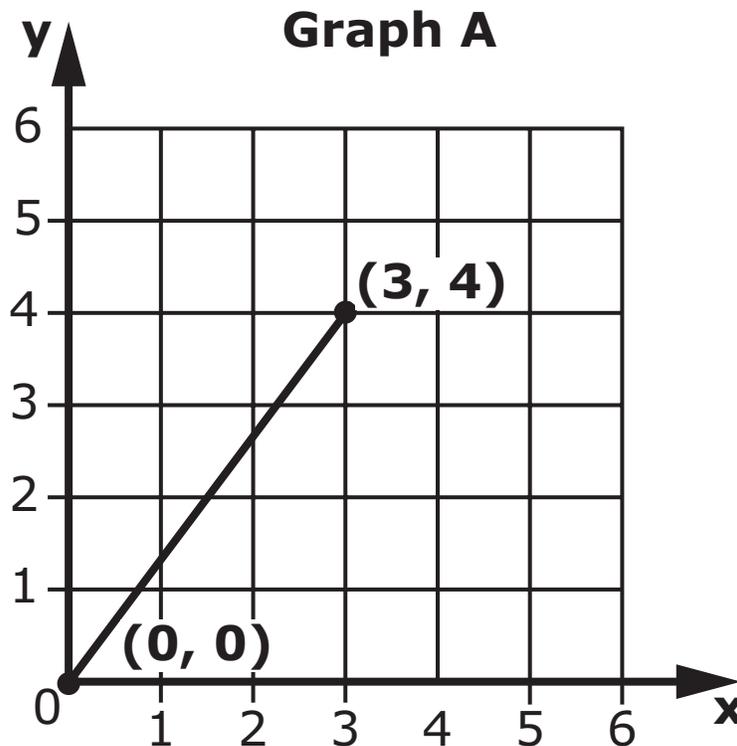
One way to find the slope of a line is to choose two points marked on the line. For example, you could choose the points (0, 0) and (3, 4) to find the rise and run of the line in this graph.

To find the rise, start at point (0, 0) and count up to the line that intersects point (3, 4): one, two, three, four. This is the rise: 4.

Count from the 0 to the 4 on the y-axis to the student.

This is where the rise goes.

Point to the numerator of the slope graphic.

To find the run, start at 0 and count over to point (3, 4): one, two, three. This is the run: 3.

Item 29, continued

Count from the 0 on the y-axis to point (3, 4) to the student.

This is where the run goes.

Point to the denominator of the slope graphic.

The slope of the line in Graph A is *[Graphic description: "four over three"]* $\dfrac{4}{3}$.

This is another line graph.

Point to Graph B as the TTS or TA reads the graphic description.

[Graphic description: "This is a line graph titled, 'Graph B.' The x-axis starts at zero and has seven equally spaced marks increasing by ones moving to the right. The y-axis starts at zero and has seven equally spaced marks increasing by ones moving upward."]
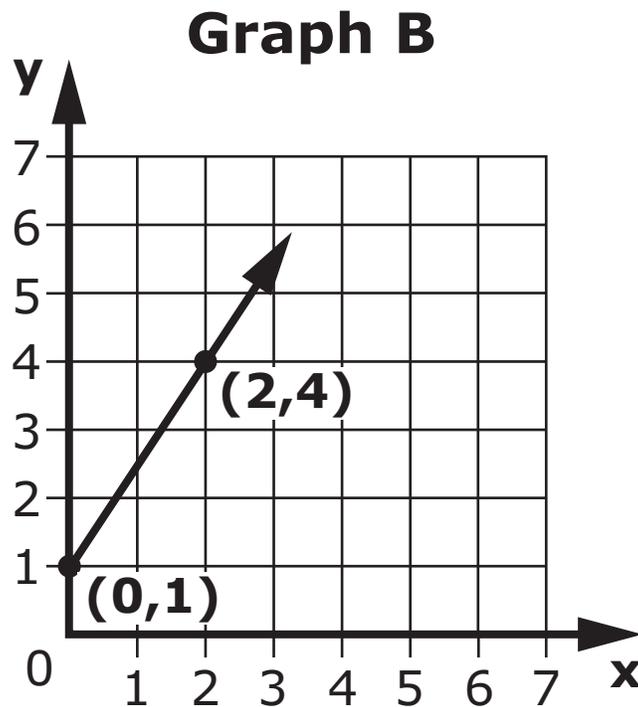
Graph B

Item 29, continued

What is the slope of this line?

Point to the line on Graph B.

Point to each option as the TTS or TA reads each graphic description.

[Graphic description: "A. two over three"]

A. $\dfrac{2}{3}$

[Graphic description: "B. three over two"]

B. $\dfrac{3}{2}$

[Graphic description: "C. four over two"]

C. $\dfrac{4}{2}$

Calculator may be used on this item.

Item 30

This item is about locating numbers on a number line.

This is *[Graphic description: "square root of twelve"]* $\sqrt{12}$.
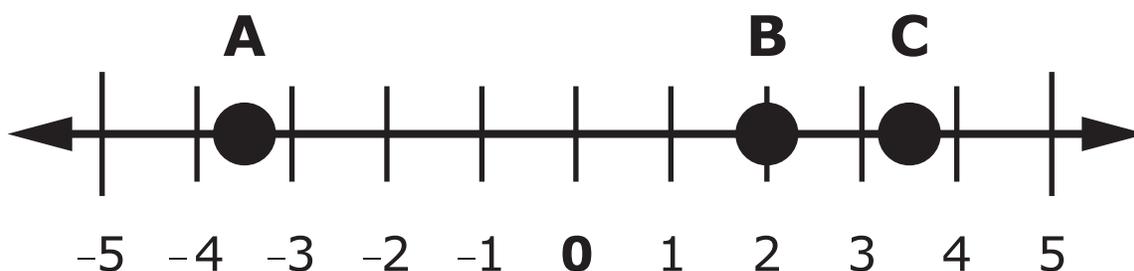
> *Point to the symbol for the square root of twelve.*

$$\sqrt{12}$$

The value of *[Graphic description: "square root of twelve"]* $\sqrt{12}$ is about *[Graphic description: "three and five tenths"]* 3.5.

This is a number line. Each letter stands for a point on the number line.

> *Point to the number line as the TTS or TA reads the graphic description.*

> *[Graphic description: "This is a number line beginning at negative five on the left, followed by ten equally spaced marks, and ending at five on the right. There are three labeled points on the number line. Point A is located between negative four and negative three. Point B is located at two. Point C is located between three and four."]*

Use the number *[Graphic description: "three and five tenths"]* 3.5 to find the approximate location of *[Graphic description: "square root of twelve"]* $\sqrt{12}$ on the number line.

Which point shows the approximate location of *[Graphic description: "square root of twelve"]* $\sqrt{12}$ on the number line?

> *Point to each option as the TTS or TA reads each option.*

A.   point A

Item 30, continued

    B.   point B

    C.   point C

Calculator may be used on this item.

Provide student with Formula 4, Volume of a Cylinder from the Grade 8 Mathematics Practice Test Reference Materials.
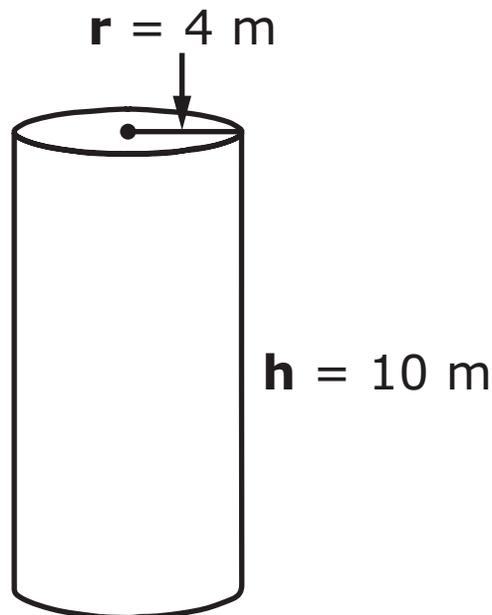
Item 31

This item is about finding the volume of a cylinder.

The volume of a cylinder is the amount of space inside it.

This is a picture of a cylinder.

> *Point to the picture of a cylinder.*

$$\mathbf{r} = 4 \text{ m}$$

$$\mathbf{h} = 10 \text{ m}$$

The radius of this cylinder is 4 meters.

> *Point to the radius and its label.*

The height of the cylinder is 10 meters.

> *Point to the height and its label.*

Item 31, continued

This is the formula for the volume of a cylinder.

Point to the formula as the TTS or TA reads the graphic description.

*[Graphic description: "Volume equals pi times **r** times **r** times **h**."]*

$$\text{Volume} = \pi \times \mathbf{r} \times \mathbf{r} \times \mathbf{h}$$

Use the number *[Graphic description: "three and fourteen hundredths"]* 3.14 for *[Graphic description: "pi"]* π.

The letter **r** stands for the cylinder's radius. The letter **h** stands for the cylinder's height.

*Point to each letter **r** and the letter **h** in the formula.*

The numbers are put into the formula to find the volume of the cylinder.

Point to the formula template as the TTS or TA reads the graphic description.

*[Graphic description: "Volume equals pi times **r** times **r** times **h**. Volume equals blank times blank times blank times blank."]*

$$\text{Volume} = \pi \times \mathbf{r} \times \mathbf{r} \times \mathbf{h}$$
$$\text{Volume} = \_ \times \_ \times \_ \times \_$$

Use the number *[Graphic description: "three and fourteen hundredths"]* 3.14 for *[Graphic description: "pi"]* π in the first blank.

Point to the first blank in the formula template.

The cylinder's radius goes into the second and third blanks.

Point to the next two blanks in the formula template.

The cylinder's height goes into the last blank.

Point to the last blank in the formula template.

Which equation has the correct numbers to find the volume of this cylinder?

Point to the picture of the cylinder.

Point to each option as the TTS or TA reads each graphic description.

[Graphic description: "A. volume equals three and fourteen hundredths times four times four times ten."]

A. Volume = 3.14 × 4 × 4 × 10

[Graphic description: "B. volume equals three and fourteen hundredths times three and fourteen hundredths times ten."]

B. Volume = 3.14 × 3.14 × 10

[Graphic description: "C. volume equals three and fourteen hundredths times four times ten times ten."]

C. Volume = 3.14 × 4 × 10 × 10

Calculator may be used on this item.

Provide student with Graph 9, "Distance Hiked" from the Grade 8 Mathematics Practice Test Reference Materials.
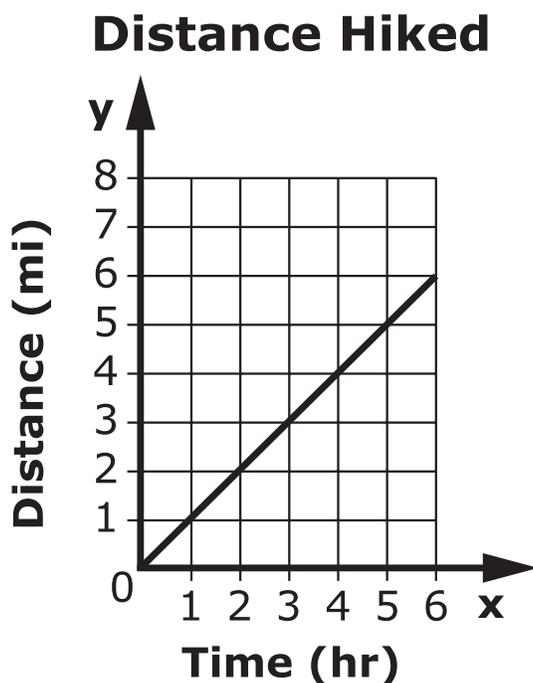
Item 32

This item is about a line graph.

You are going to look for a relationship between the **x** values and the **y** values in the data shown on a graph. For example, in a positive linear relationship both the **x** value and the **y** value increase. In a negative linear relationship, the **y** value decreases as the **x** value increases. Sometimes, the data do not form a straight line on a graph. This is called a nonlinear relationship.

This graph shows the relationship between the number of hours a person hikes and the total number of miles hiked.

Point to the line graph as the TTS or TA reads the graphic description.

[Graphic description: "This is a line graph titled, 'Distance Hiked.' The x-axis starts at zero and has six equally spaced marks increasing by ones moving to the right. It is labeled Time in hours. The y-axis starts at zero and has eight equally spaced marks increasing by ones moving upward. It is labeled Distance in miles."]

Distance Hiked

Item 32, continued

Which relationship does this graph show?

Point to the graph.

Point to each option as the TTS or TA reads each option.

A.   positive linear

B.   negative linear

C.   nonlinear

Calculator may be used on this item.

Item 33

This item is about recognizing congruent rectangles.

These two rectangles are congruent.

> *Point to the rectangles.*
>
> *[For students with visual impairment, read "This is a picture of two rectangles. The first rectangle is three units long and seven units wide. The second rectangle is seven units long and three units wide."]*
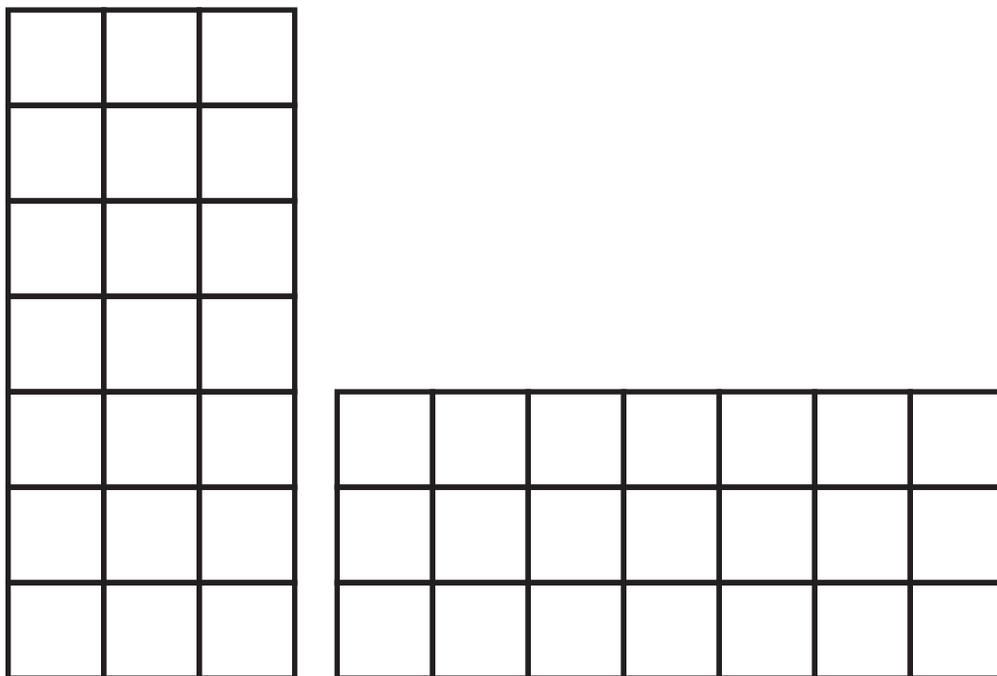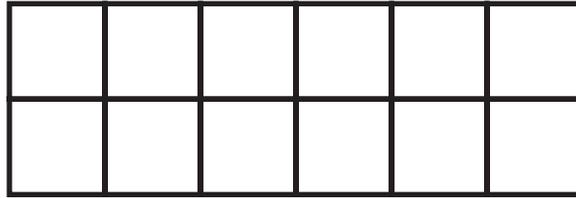
Congruent rectangles have the same size and the same shape.

Item 33, continued

This is another rectangle.

Point to the rectangle.

[For students with visual impairment, read "This is a rectangle. It is six units long and two units wide."]

Which rectangle is congruent to this rectangle?
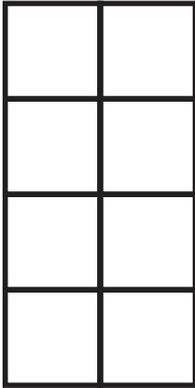
Point to the 6 × 2 rectangle.

Point to each option.

[For students with visual impairment, read "A. This is a rectangle. It is one unit long and six units wide."]
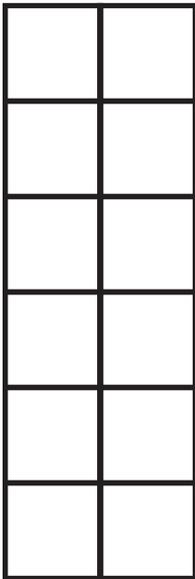
A.

Item 33, continued

[For students with visual impairment, read "B. This is a rectangle. It is two units long and four units wide."]

B.

[For students with visual impairment, read "C. This is a rectangle. It is two units long and six units wide."]

C.

Calculator may be used on this item.

Provide student with Graph 10, "Candle B" from the Grade 8 Mathematics Practice Test Reference Materials.
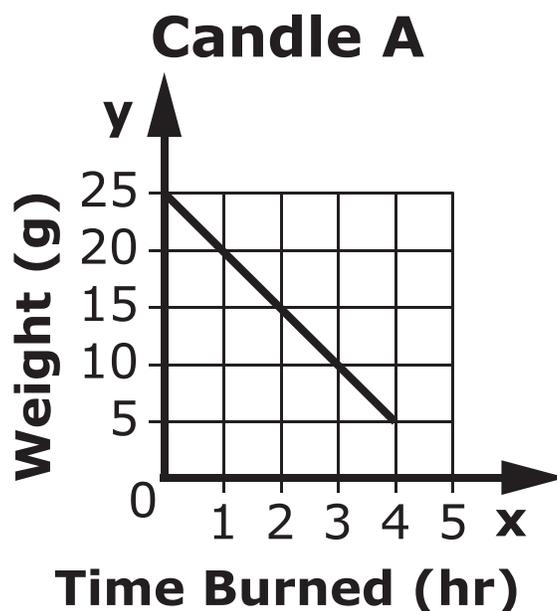
Item 34

This item is about line graphs.

A line graph shows a relationship between two quantities.

This line graph shows the weight of Candle A over the time it is burned.

> *Point to the graph as the TTS or TA reads the graphic description.*

> *[Graphic description: "This line graph is titled, 'Candle A.' The x-axis starts at zero and has five equally spaced marks increasing by ones moving to the right. It is labeled Time Burned in hours. The y-axis starts at zero and has five equally spaced marks increasing by fives moving upward. It is labeled Weight in grams."]*

Candle A

The line on the graph goes down.

> *Trace the line on the graph, "Candle A."*

The candle's weight goes down, or decreases, by 5 grams each hour the candle is burned.

Point to the number 1 on the Time Burned axis and the number 20 on the Weight axis.

This is another graph. This line graph shows the weight of Candle B over the time it is burned.

Point to the graph as the TTS or TA reads the graphic description.

[Graphic description: "This line graph is titled, 'Candle B.' The x-axis starts at zero and has five equally spaced marks increasing by ones moving to the right. It is labeled Time Burned in hours. The y-axis starts at zero and has five equally spaced marks increasing by tens moving upward. It is labeled Weight in grams."]
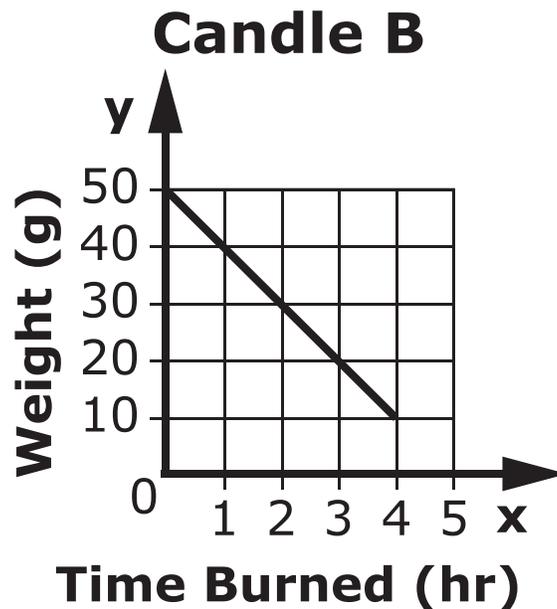
Candle B

How much weight does Candle B lose each hour it is burned?

Point to the graph, "Candle B."

Point to each option as the TTS or TA reads each option.

A.   Candle B's weight **decreases** by 5 grams each hour it is burned.

B.   Candle B's weight **decreases** by 10 grams each hour it is burned.

C.   Candle B's weight **decreases** by 15 grams each hour it is burned.

Calculator may be used on this item.

Provide student with Table 2, "Traffic Survey" and incomplete chart from the Grade 8 Mathematics Practice Test Reference Materials and markers, pencils, or counters.

Item 35

This item is about graphing a set of data.

This data table shows the number of vehicles crossing Main Street over three hours.

Point to the data table as the TTS or TA reads the graphic description.

[Graphic description: "This is a data table titled, 'Traffic Survey.' It shows three hours and the number of vehicles crossing Main Street each of those hours. Hour one had fifteen vehicles. Hour two had twenty-five vehicles. Hour three had thirty vehicles."]

Traffic Survey

Hour	Number of Vehicles
1	15
2	25
3	30

Item 35, continued

These ordered pairs can be plotted on this graph.

Point to the graph as the TTS or TA reads the graphic description.

[Graphic description: "This is a graph titled, 'Traffic Survey.' The x-axis starts at zero and has eight equally spaced marks increasing by ones moving to the right. It is labeled Hour. The y-axis starts at zero and has ten equally spaced marks increasing by fives moving upward. It is labeled Number of Vehicles. There are two points on the graph."]

Traffic Survey
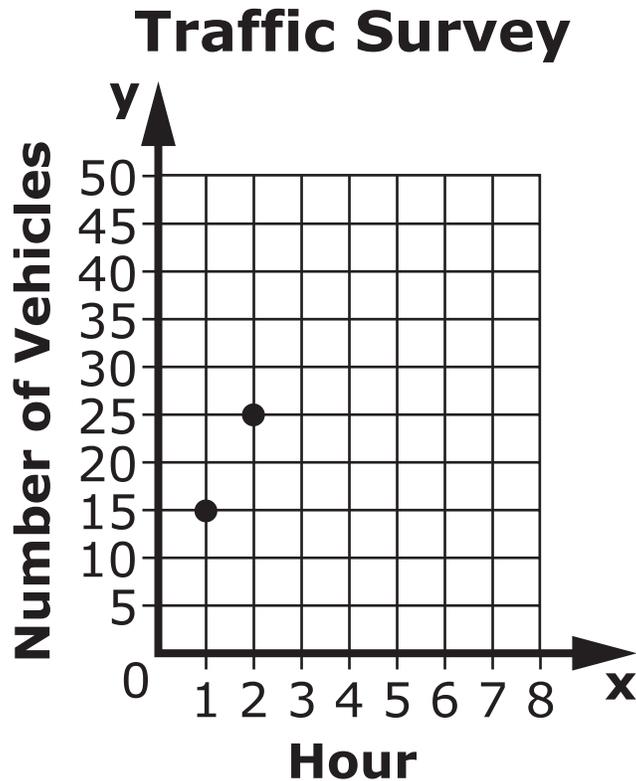
The first ordered pair is (1, 15).

Point to the first ordered pair (1, 15) in the data table.

First, the number 1 is found on the Hour axis.

Point to the number 1 on the Hour axis.

Then the number 15 is found on the Number of Vehicles axis.

Point to the number 15 on the Number of Vehicles axis.

Item 35, continued

The point goes where these two numbers meet. This is the same graph with the first two points already plotted on it.

Point to the point (1, 15) on the graph showing two points plotted.

The second ordered pair is (2, 25).

Point to the second ordered pair (2, 25) in the data table.

First, the number 2 is found on the Hour axis.

Point to the number 2 on the Hour axis.

Then the number 25 is found on the Number of Vehicles axis.

Point to the number 25 on the Number of Vehicles axis.

The point goes where these two numbers meet.

Point to the point (2, 25) on the graph showing two points plotted.

Now plot the last ordered pair on the graph.

Present the student with the incomplete graph and instructional materials (e.g., markers, pencils, small objects such as counters), and place the materials onto the work surface in front of the student.

Where does the last ordered pair in the data table go on the graph?

Allow the student time to complete the graph.

Rubric

Test Administrator: After student completes work, record on the computer if the student provided the correct answer or the student did not provide the correct answer.

Score	Description
1	Student correctly plots the ordered pair on the graph.
0	Student does not plot the ordered pair correctly on the graph.

Item 35, continued

Sample Response

Traffic Survey
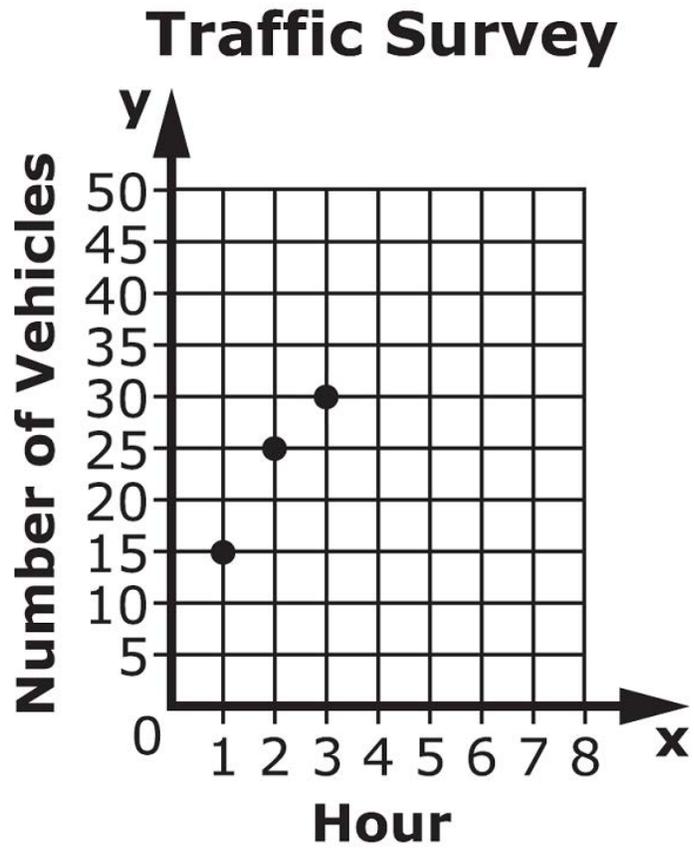
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Practice Test