



ISTEP+ Experience Online

Mathematics

Grades 3-8 & 10

Purpose

Different Technology-Enhanced Item Types

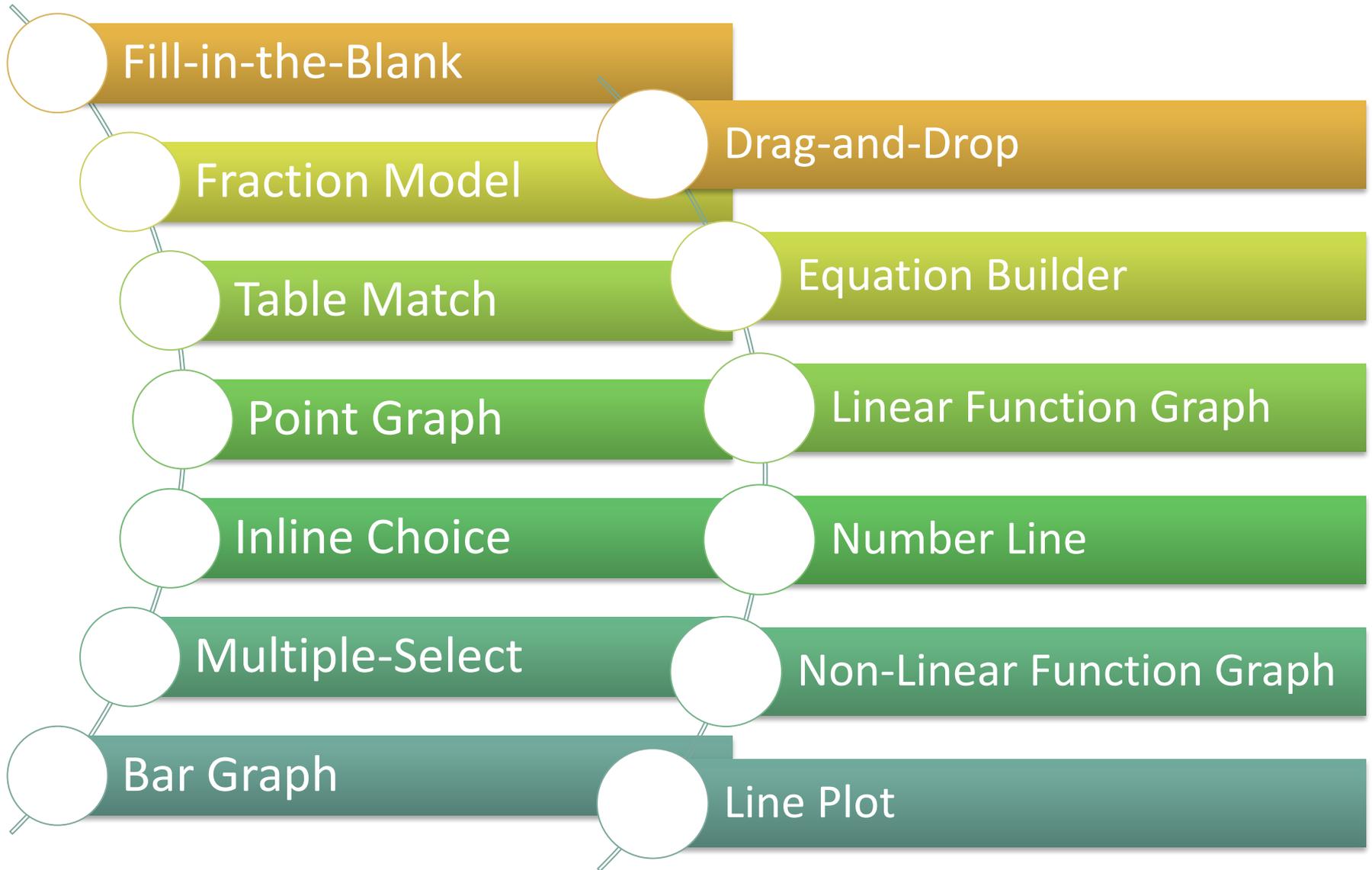
Proper Methods for Completing Items and Showing Work

To prepare students for success by letting them ***Experience...***

The Online Testing Platform

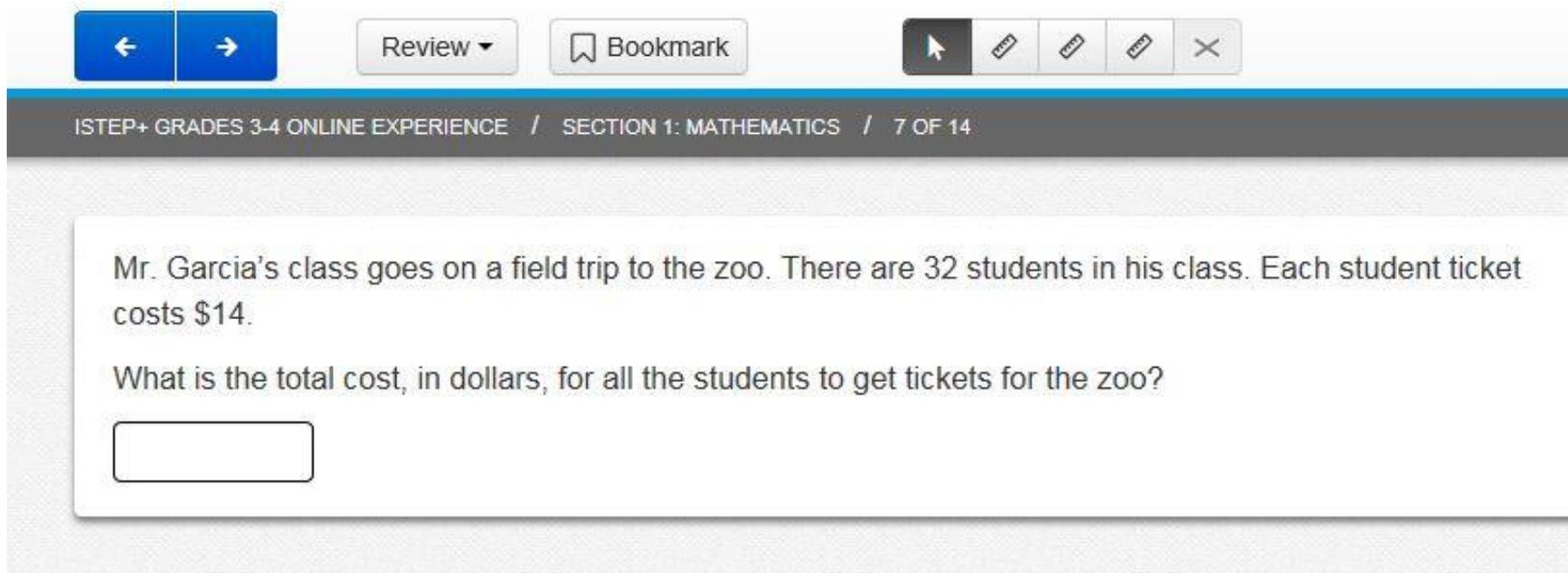
Using Online Math Tools (Protractors, Calculators, etc.)

Constructed Response and Technology-Enhanced Math Item Types Found on ISTEP+



Fill-in-the-Blank

Experience Online Grades 3-4



The screenshot shows a digital test interface. At the top, there are navigation buttons: a blue button with left and right arrows, a 'Review' button with a dropdown arrow, a 'Bookmark' button with a bookmark icon, and a toolbar with a mouse cursor, eraser, highlighter, and a close button. Below this is a dark grey header bar with the text 'ISTEP+ GRADES 3-4 ONLINE EXPERIENCE / SECTION 1: MATHEMATICS / 7 OF 14'. The main content area is a light grey box containing the following text: 'Mr. Garcia's class goes on a field trip to the zoo. There are 32 students in his class. Each student ticket costs \$14. What is the total cost, in dollars, for all the students to get tickets for the zoo?'. Below the text is a rectangular input field.

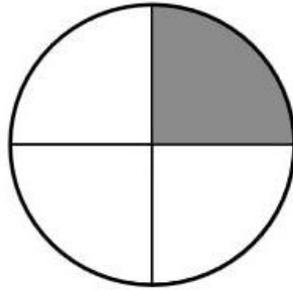
Invalid Inputs:

- **Negative Sign (Grades 3-5)**
- **Dollar Sign (Certain Items in All Grades)**
- **Percent Sign (All Grades)**



Maryn drew the fraction model shown.

Maryn's Fraction Model



Create a fraction equivalent to the fraction Maryn modeled, but with a different numerator. Divide the figure into the correct number of equal parts by using the More and Fewer buttons. Then select the parts you want to shade.

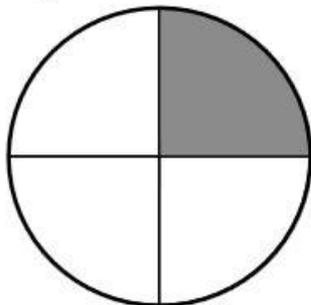
Fraction Model Item

Experience Online
Grades 3-4

Reset: Removes all changes made to the shape.

Maryn drew the fraction model shown.

Maryn's Fraction Model

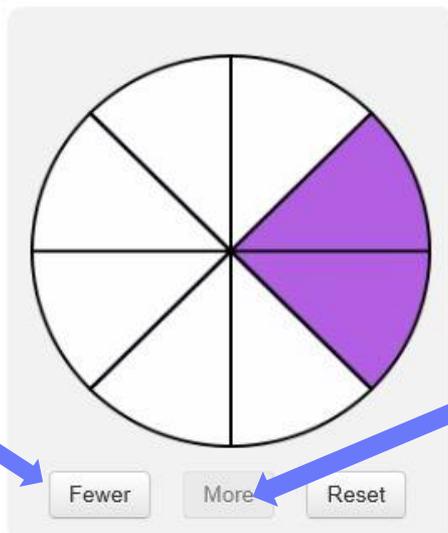


Create a fraction equivalent to the fraction Maryn modeled, but with a different numerator. Divide the figure into the correct number of equal parts by using the More and Fewer buttons. Then select the parts you want to shade.

Fraction Model Item

Experience Online
Grades 3-4

Fewer: Divides the shape into fewer parts.



More: Divides the shape into more parts.

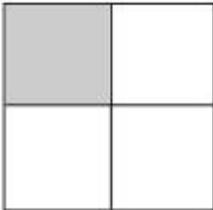
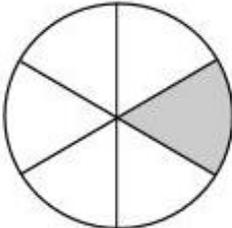
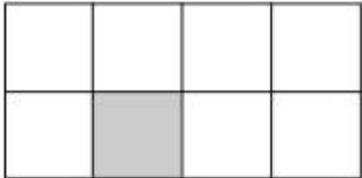
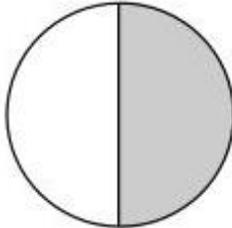
Table Match Item

Experience Online Grades 3-4

← → Review Bookmark [Navigation icons]

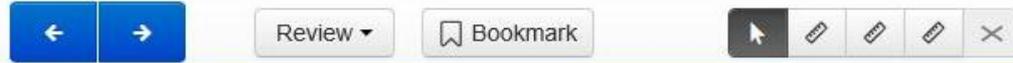
Emily shaded a fraction of several shapes. Each shape is separated into equal parts.

Click on the box that shows the fraction of each shape that is shaded.

				
$\frac{1}{8}$	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
$\frac{1}{6}$	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
$\frac{1}{2}$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
$\frac{1}{4}$	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Point Graph Item

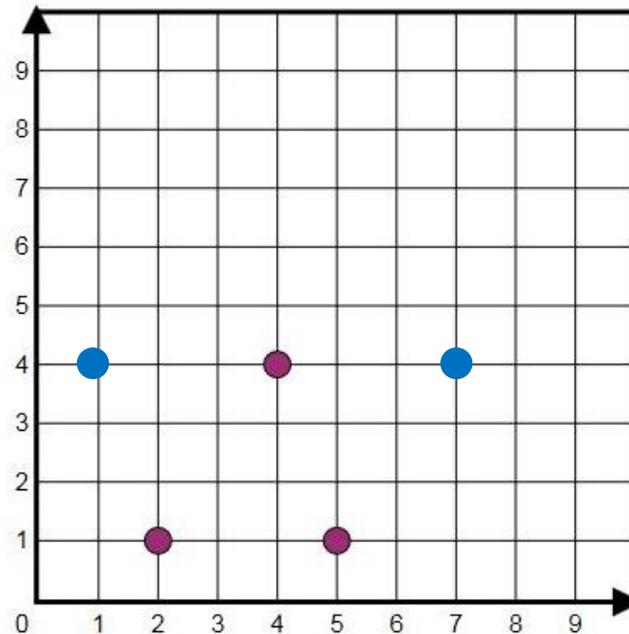
Experience Online Grades 3-4



ISTEP+ GRADES 3-4 ONLINE EXPERIENCE / SECTION 1: MATHEMATICS / 8 OF 14

Three of the vertices (corners) of a parallelogram are drawn on a grid.

Place the fourth vertex (corner) of the parallelogram on the grid.



Select the location for the point to appear.

Line Plot Item

Experience Online Grades 3-4



Review ▾

Bookmark

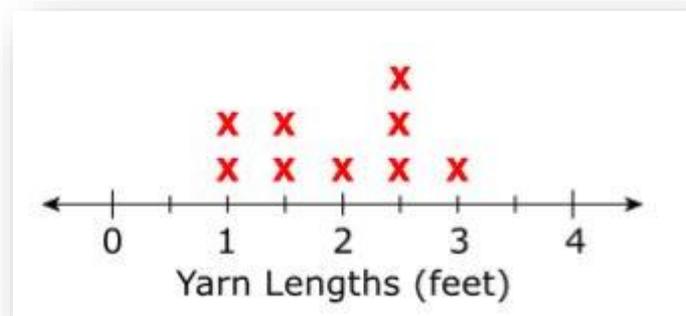
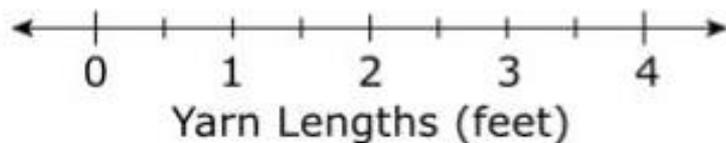


ISTEP+ GRADES 3-4 ONLINE EXPERIENCE / SECTION 1: MATHEMATICS / 12 OF 14

Darius measured the lengths of several pieces of yarn and listed the lengths, in feet, below.

3, $2\frac{1}{2}$, 1, 2, $2\frac{1}{2}$, 1, $1\frac{1}{2}$, $2\frac{1}{2}$, $1\frac{1}{2}$

Complete the line plot below to represent the lengths of yarn Darius measured.



Completed Plot

Inline-Choice Item

Experience Online Grades 5-6



Review ▾

Bookmark



ISTEP+ GRADES 5-6 ONLINE EXPERIENCE / SECTION 1: MATHEMATICS / 2 OF 11

Gina buys a 12-pound bag of oranges. There are 32 oranges in the bag. All the oranges are about the same weight.

Gina writes an equation to calculate the weight, in OUNCES, of one orange. Select from the drop-down menus to complete Gina's equation.

12 32 16 = ounces

Choose
X
÷

Choose
X
÷

Choose
6
24
144

Multiple-Select Item

Experience Online Grades 5-6



Review ▾

Bookmark



ISTEP+ GRADES 5-6 ONLINE EXPERIENCE / SECTION 1: MATHEMATICS / 3 OF 11

Select the **THREE** equations that are **TRUE**.

A. $\frac{1}{2} + \frac{1}{8} = \frac{5}{8}$

B. $\frac{2}{3} + \frac{5}{6} = \frac{7}{9}$

C. $\frac{2}{5} + \frac{1}{3} = \frac{3}{8}$

D. $\frac{3}{4} - \frac{1}{8} = \frac{5}{8}$

E. $\frac{3}{8} - \frac{1}{4} = \frac{1}{8}$

F. $\frac{5}{8} - \frac{1}{3} = \frac{4}{8}$

You are permitted a **maximum of 3** choices for this question.

Please unselect one of your choices before making another choice.



Review ▾

Bookmark



Kenna has eight fish tanks. The numbers of fish in each tank are shown in this list.

5, 18, 36, 13, 5, 3, 7, 17

Drag a number into each box to answer the questions about the data.

What is the median?

What is the mean?

What is the mode?

- 5
- 7
- 9
- 10
- 12
- 13
- 17
- 31

Drag-and-Drop Item

Experience Online

Grades 5-6

What is the median?

What is the mean?

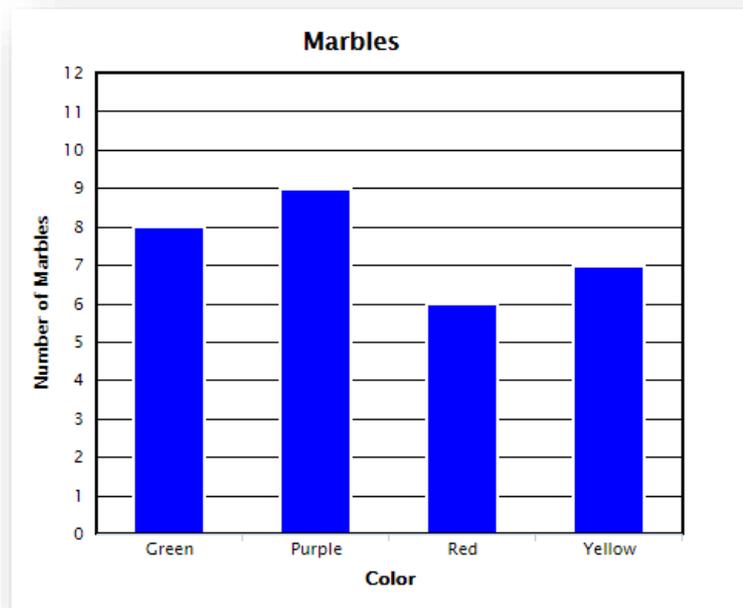
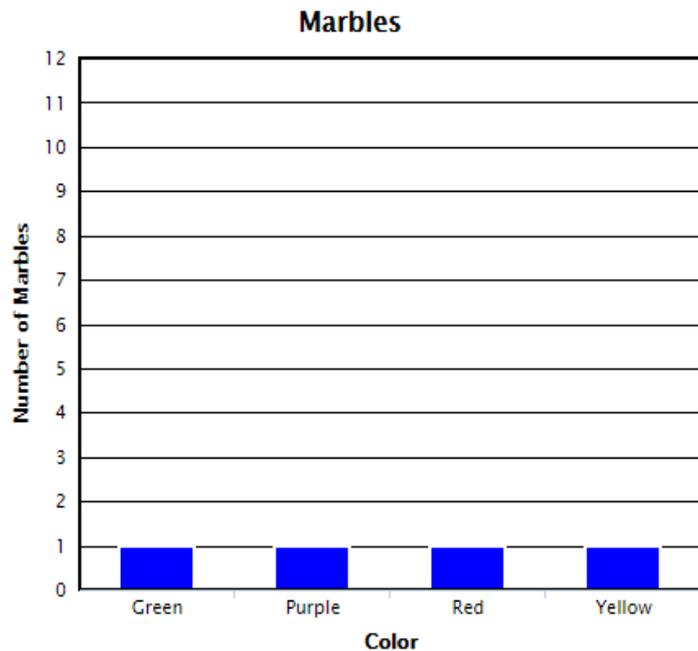
What is the mode?

- 7
- 9
- 12
- 17
- 31

Bar Graph Item

Experience Online Grades 5-6

Molly bought a bag of marbles containing 30 marbles with 4 different colored marbles in the bag. She found that there were 8 green marbles, 9 purple marbles, and 6 red marbles. The remaining marbles were yellow. Complete the bar graph to indicate the number of marbles of each color in the bag. Drag the top of each bar to the correct height.



(Completed Graph)

Equation Builder (Constructed- /Extended-Response) *Experience Online Grades 5-6*

← → Review Bookmark

ISTEP+ GRADES 5-6 ONLINE EXPERIENCE / SECTION 1: MATHEMATICS / 7 OF 11

A baker uses small and large boxes to package bagels. The small boxes hold 8 bagels and the large boxes hold 13 bagels.

Part A

Create an expression to represent the total number of bagels in x small boxes and y large boxes.

Show All Work

← → 🗑️

Blank input area for the equation.

Math symbols

+	-	×	÷
±	-	·	/
=	≠	$\frac{\square}{\square}$	$\frac{\square}{\square}$
y^x	$\sqrt{\quad}$	$\sqrt[3]{\quad}$	π
(·)	°	·	

Relations

Geometry

Relations

=	≠	~	≈
<	>	≈	≉
≤	≥	≐	≇

Geometry

→	↔	-	
⊥	∠	m∠	△
□	○		

Part B

Assuming the boxes are full, how many bagels are packaged in 5 small boxes and 3 large boxes?

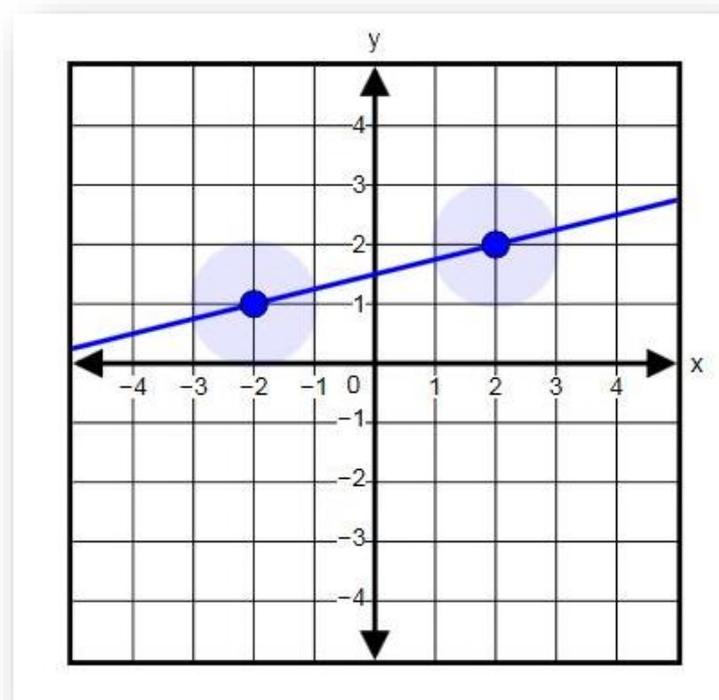
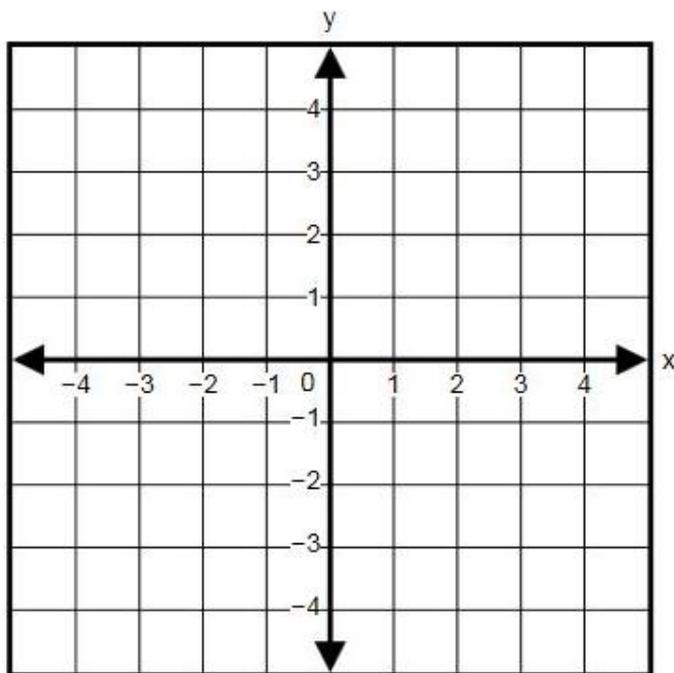
Linear Function Graph Item

Experience Online Grades 7-8

← → Review Bookmark

ISTEP+ GRADES 7-8 ONLINE EXPERIENCE / SECTION 1: MATHEMATICS / 4 OF 14

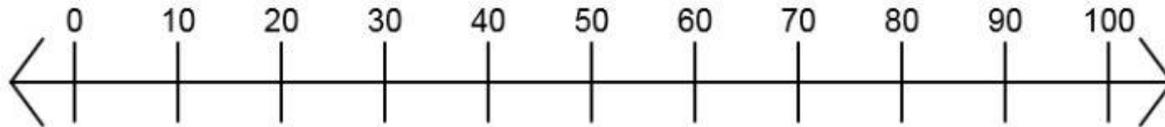
On the coordinate grid, graph a line that contains the point $(-2, 1)$ and has a slope of $\frac{1}{4}$.



(Completed Graph)

A student club at a middle school wants to sell plates of food at a fund-raiser. The club spent \$100 on food to prepare the plates and will sell them for \$5 each. The club wants to make a profit of at least \$200. This situation can be represented by the inequality $5n - 100 \geq 200$, where n represents the number of plates sold.

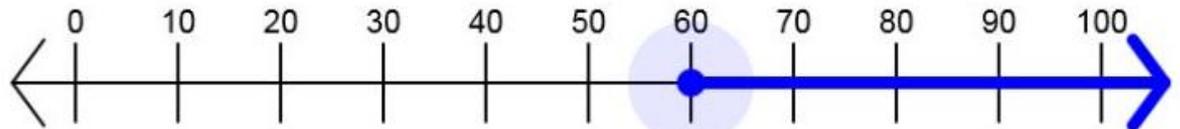
On the number line below, represent the solution set for this inequality. Select a solution-set indicator. Drag the points on the indicator to the appropriate locations on the number line.



Number Line Item

Experience Online Grades 7-8

Completed Number Line



				<input type="button" value="Remove"/>

Non-Linear Function Graph Item

Experience Online Grade 10

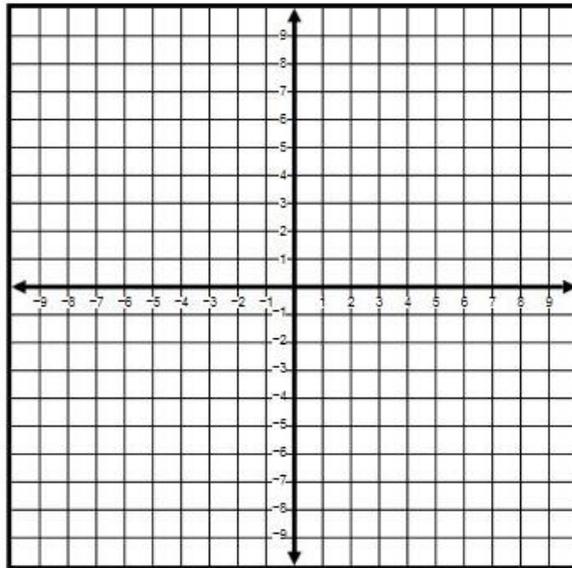
← → Review Bookmark

ISTEP+ GRADE 10 ONLINE EXPERIENCE / SECTION 1: MATHEMATICS / 1 OF 4

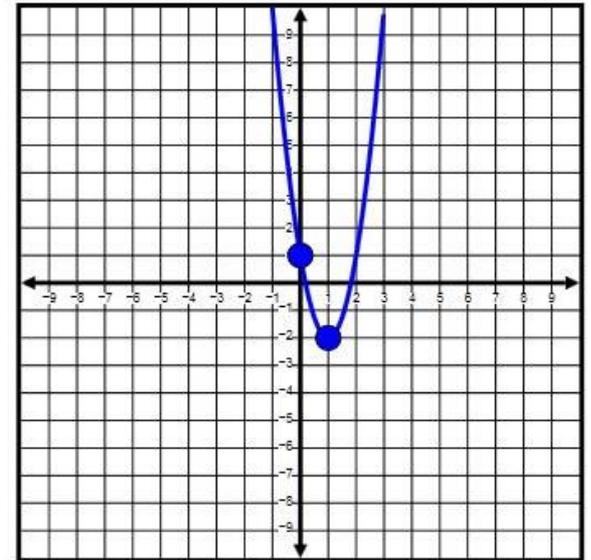
Show the graph of $y = 3x^2 - 6x + 1$ on the coordinate grid.

Select a button to choose the type of graph. Click on the grid twice to plot two points on the graph. Drag the points to adjust the position of the graph.

- Linear
- Quadratic
- Exponential



Completed Graph



Tools – Review

The screenshot displays a review interface with a list of questions and a summary bar at the bottom. The interface includes a navigation bar with a 'Review' dropdown, a 'Bookmark' button, and a user profile 'J. Doe'. The list of questions shows 'Question 1' and 'Question 2' with empty circles, 'Question 3' with a filled circle and a bookmark icon, and 'Question 4' through 'Question 10' with filled circles. The summary bar at the bottom shows 'All Questions' (11), 'Not Answered' (10), and 'Bookmarks' (1). Red callouts point to 'Question 1' (labeled 'Question Answered'), 'Question 2' (labeled 'Question Not Answered'), and the 'Not Answered' count (labeled 'Item Bookmarked'). A blue callout points to the bookmark icon on 'Question 3' (labeled 'Item Bookmarked').

Review

Bookmark

J. Doe

Question 1

Question 2

Question 3

Question 4

Question 5

Question 6

Question 7

Question 8

Question 9

Question 10

11

All Questions

10

Not Answered

1

Bookmarks

Question Answered

Question Not Answered

Item Bookmarked

Item Bookmarked

Tools – Bookmark

← → Review **Bookmark** J. Doe

End of Section 3: Science

Use the **Review** button above to go back and review your answers. When you are done, use the **Submit Section** button below to submit your answers.

11 Not Answered 1 Bookmarks

Submit Section >>

← → Review **Bookmark** J. Doe

Item not Bookmarked

Item Bookmarked

Tools – Answer Eliminator



Which of these is the MOST LIKELY number of gray wolves in the northern Rocky Mountains in 2001?

~~A. 375~~

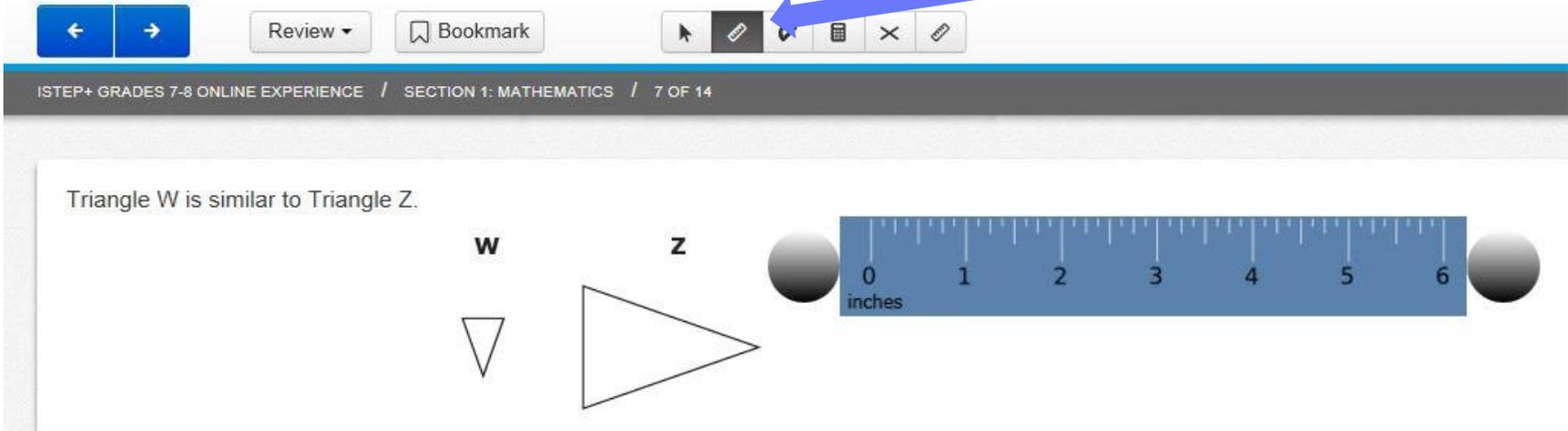
B. 463

C. 550

~~D. 638~~

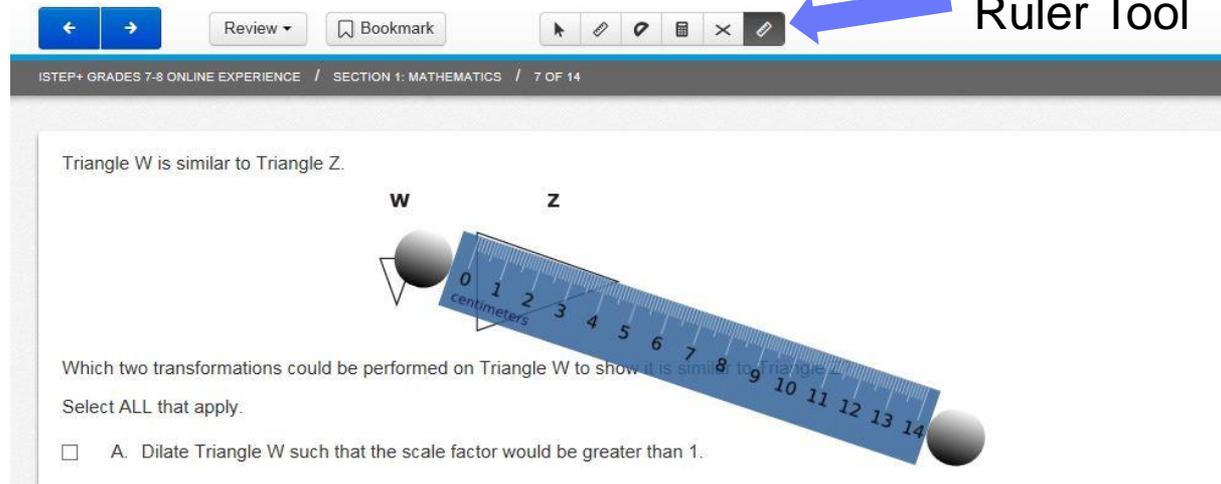
Tools – Ruler

Inch Ruler Tool



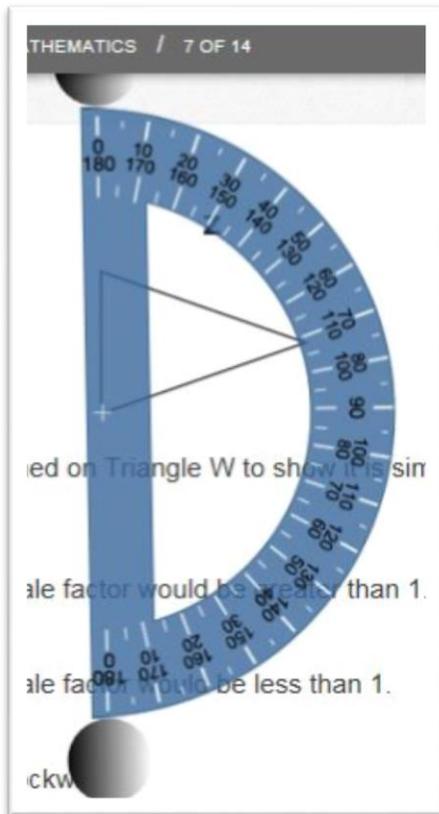
1. Select a ruler icon to use the ruler.
2. Select and drag the middle to move the ruler.
3. Select and drag the gray ends to tilt/angle the ruler.
4. Select the ruler or arrow icons on the toolbar to remove the ruler from the screen.

Centimeter Ruler Tool



Tools – Protractor

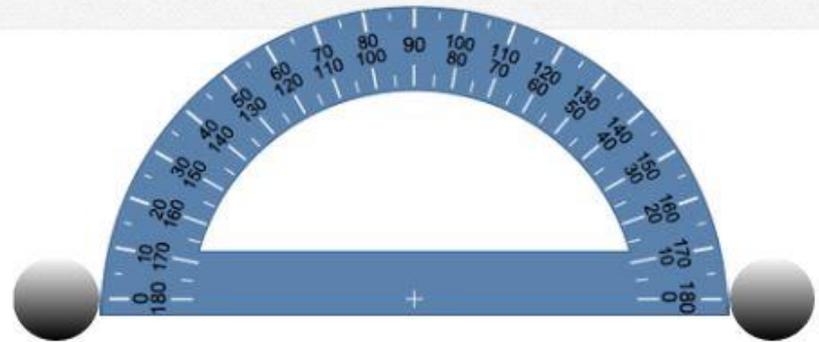
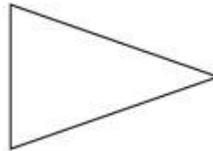
Triangle W is similar to Triangle Z.



W



Z



Tilt the tool by dragging the gray circles.

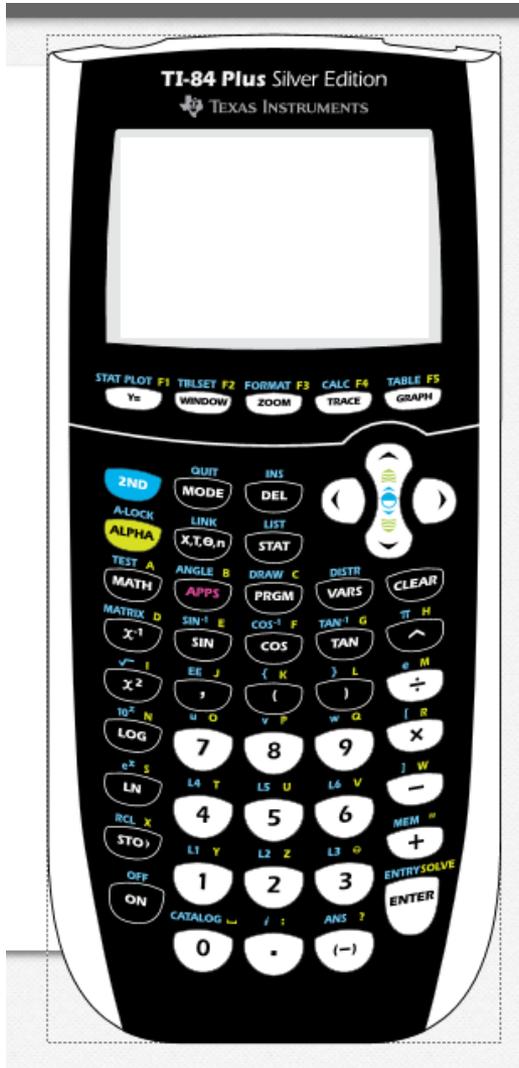
Tools – Calculator



Grades 6-8

***Available on
Calculator
Sessions Only***

Tools – Calculator



Grade 10

*Available on
Calculator
Sessions Only*

Feature – Background/Foreground Color

The screenshot displays a mobile application interface with a top navigation bar and a central dialog box. The navigation bar includes a back arrow, a forward arrow, a 'Review' dropdown, a 'Bookmark' button, and a close button. The user's name 'J. Doe' and a user profile icon are visible in the top right corner. A red box highlights the user profile icon and the text 'Change the background and foreground color' in the user menu. The 'Contrast Settings' dialog box is open, showing seven color contrast options with radio buttons and a 'Continue' button at the bottom. Red arrows point from each contrast option to a corresponding text element 'A. 375' in the background, which is styled to match the selected contrast.

Navigation: Review, Bookmark, Close

User: J. Doe

Menu: Change the background and foreground color, Show Line Reader Mask, Sign out of TestNav

Contrast Settings:

- abc Black on White (Default)
- abc Black on Cream
- abc Black on Light Blue
- abc Black on Light Magenta
- abc White on Black
- abc Yellow on Blue
- abc Gray on Green

Continue →

Other Resources

Mathematics Standards

<http://www.doe.in.gov/standards/mathematics>

ISTEP+ Grades 3 through 8

<http://www.doe.in.gov/assessment/istep-grades-3-8>

ISTEP+ Grade 10

<http://www.doe.in.gov/assessment/istep-grade-10>

- **Calculator Policy**
- **Graph Paper Guidance**
- **Math Reference Sheets**

Questions

- Please contact the following staff members if you have questions regarding Mathematics:
 - Mary Williams, Grades 3-5, at mwilliams@doe.in.gov.
 - Joe Staten, Grades 6-8 & 10, at jstaten@doe.in.gov.
- For other questions, please contact the Office of Student Assessment by calling (317) 232-9050 or via email at INassessments@doe.in.gov.



Glenda Ritz, NBCT

Indiana Superintendent of Public Instruction