



# 2025 Released Tests

Aligned to the Standards

CONTENT BUILDER FOR THE PLC

## Math Grade 7

IQ Analysis | Investigating the Question – Released Tests User Guide

Student Expectation/Reporting Category

DISCUSS: How many questions for this Student Expectation were asked over the past years? Which parts were assessed?

| IQ Analysis   Investigating the Question                                           |                                | SE #  | RC #  |
|------------------------------------------------------------------------------------|--------------------------------|-------|-------|
| Units                                                                              |                                |       |       |
| SE # Student Expectation                                                           | Analysis of Assessed Standards |       |       |
| ! [Year] [Question #]                                                              | Cluster                        |       |       |
|                                                                                    | Subcluster                     |       |       |
|                                                                                    | Content                        |       |       |
|                                                                                    | Process                        |       |       |
|                                                                                    | Item Type                      |       |       |
|                                                                                    | Stimulus                       |       |       |
|                                                                                    | Data Analysis                  |       |       |
|                                                                                    | Item                           | State | Local |
|                                                                                    |                                |       |       |
|                                                                                    |                                |       |       |
| Error Analysis                                                                     |                                |       |       |
| <input type="checkbox"/> Guessing <input type="checkbox"/> Stopped Too Early       |                                |       |       |
| <input type="checkbox"/> Careless Error <input type="checkbox"/> Mixed Up Concepts |                                |       |       |
| Learning from Mistakes                                                             |                                |       |       |
| Instructional Implications                                                         |                                |       |       |
| *Correct Answer                                                                    |                                |       |       |

Units

COMPLETE: Note the units in which the student expectation is taught.

Analysis of Assessed Standards

DISCUSS and NOTE: Review the cluster, subcluster, content/process standards, and item type assessed for each item.

Stimulus

COMPLETE: Note visual representation used.  
DISCUSS and NOTE: How many different stimuli were used to assess this student expectation?

State-Level SE Data and Error Analysis

COMPLETE: Add local data for the item.  
DISCUSS and NOTE: What are the most common error patterns?

Learning from Mistakes

DISCUSS and NOTE: What patterns in learning errors emerged across items? What is the best way to respond to those error patterns?

Instructional Implications

DISCUSS and NOTE: How will we adapt instruction to help students improve understanding and application of this student expectation?

In conjunction with the IQ analysis tool, the lead4ward field guides can be a helpful resource for understanding error patterns and instructional implications.

[Learn more](#)

# Rational Number Representations and Operations

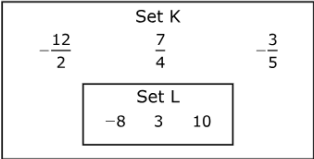
**7.2 Number and operations** The student applies mathematical process standards to represent and use rational numbers in a variety of forms.

**7.3 Number and operations.** The student applies mathematical process standards to add, subtract, multiply, and divide while solving problems and justifying solutions.

**7.2(A)** extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of rational numbers

 2025 – Q3

The Venn diagram shows numbers placed in two sets. Set K represents rational numbers, and Set L represents integers. One of the numbers is placed incorrectly.



Which statement shows how to correct the error in the diagram?

- ☐ Ⓐ Remove -8 from Set L because it is not an integer.
- ☐ Ⓑ Remove 3 from Set L because it is not an integer.
- ☐ Ⓒ Move  $-\frac{3}{5}$  to Set L because it is an integer.
- ☐ Ⓓ Move  $-\frac{12}{2}$  to Set L because it is an integer.

**\* Correct Answer (D)**  
**^highly chosen incorrect answer (A)**

Analysis of Assessed Standards

|            |                                                |
|------------|------------------------------------------------|
| Cluster    | Rational Number Representations and Operations |
| Subcluster | Representation of Rational Numbers             |
| Content    | Supporting                                     |
| Process    |                                                |
| Item Type  | Multiple Choice (1 pt)                         |
| Stimulus   |                                                |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    | ^     |       |
| B    |       |       |
| C    |       |       |
| D*   | 31    |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

|                                          |        |      |
|------------------------------------------|--------|------|
| IQ Analysis   Investigating the Question | 7.3(A) | RC 2 |
|------------------------------------------|--------|------|

| 7.3(A) add, subtract, multiply, and divide rational numbers fluently                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| 2025 – Q23<br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><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|  |                                |  |  |

**7.3(B)** apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers

Analysis of Assessed Standards

2025 – Q11

What is the value of  $-0.8 - 4\frac{2}{5}(6)$ ?

(A) -24.8

(B) -31.2

(C) -28.8

(D) -27.2

\* Correct Answer (D)  
^highly chosen incorrect answer (A,B)

|            |                                                |
|------------|------------------------------------------------|
| Cluster    | Rational Number Representations and Operations |
| Subcluster | Operations of Rational Numbers                 |
| Content    | Readiness                                      |
| Process    |                                                |
| Item Type  | Multiple Choice (1 pt)                         |
| Stimulus   |                                                |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    | ^     |       |
| B    | ^     |       |
| C    |       |       |
| D*   | 27    |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

**7.3(B)** apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers

 2025 – Q36

A scout troop buys waterproof canvas to make a tent. They buy  $11\frac{3}{4}$  yards of canvas that costs \$18.36 per yard. They receive a discount of  $\frac{1}{10}$  off the purchase amount.

How much does the scout troop spend on the canvas for the tent?

- ☐ Ⓐ \$21.57
- ☐ Ⓑ \$27.10
- ☐ Ⓒ \$194.16
- ☐ Ⓓ \$205.73

\*Correct Answer (C)  
^highly chosen incorrect answer (B)

| Analysis of Assessed Standards                    |                                                |       |
|---------------------------------------------------|------------------------------------------------|-------|
| Cluster                                           | Rational Number Representations and Operations |       |
| Subcluster                                        | Operations of Rational Numbers                 |       |
| Content                                           | Readiness                                      |       |
| Process                                           |                                                |       |
| Item Type                                         | Multiple Choice (1 pt)                         |       |
| Stimulus                                          |                                                |       |
|                                                   |                                                |       |
| Data Analysis                                     |                                                |       |
| Item                                              | State                                          | Local |
| A                                                 |                                                |       |
| B                                                 | ^                                              |       |
| C*                                                | 49                                             |       |
| D                                                 |                                                |       |
| Error Analysis                                    |                                                |       |
| <input type="checkbox"/> Guessing                 | <input type="checkbox"/> Mixed Up Concepts     |       |
| <input type="checkbox"/> Careless Error           | <input type="checkbox"/> Stopped Too Early     |       |
| Learning from Mistakes Instructional Implications |                                                |       |
|                                                   |                                                |       |

# Proportional Reasoning

**7.4 Proportionality.** The student applies mathematical process standards to represent and solve problems involving proportional relationships.

**7.7 Expressions, equations, and relationships.** The student applies mathematical process standards to represent linear relationships using multiple representations.

**7.4(A)** represent constant rates of change in mathematical and real-world problems given pictorial, tabular, verbal, numeric, graphical, and algebraic representations, including  $d = rt$

2025 – Q4

A traffic light completes 90 cycles of light changes in 2 hours. Which representation best describes the number of cycles,  $y$ , in  $x$  hours?

☐ Ⓐ  $x = 45y$

☐ Ⓑ  $y = x + 45$

☐ Ⓒ

| Traffic Light Cycles |                       |
|----------------------|-----------------------|
| Time, $x$ (hours)    | Number of Cycles, $y$ |
| 1                    | 45                    |
| 3                    | 135                   |
| 5                    | 225                   |

☐ Ⓓ

| Traffic Light Cycles |                       |
|----------------------|-----------------------|
| Time, $x$ (hours)    | Number of Cycles, $y$ |
| 0                    | 45                    |
| 3                    | 135                   |
| 5                    | 225                   |

\*Correct Answer (C)  
^highly chosen incorrect answer (B)

Analysis of Assessed Standards

|            |                         |
|------------|-------------------------|
| Cluster    | Proportional Reasoning  |
| Subcluster | Constant Rate of Change |
| Content    | Readiness               |
| Process    |                         |
| Item Type  | Multiple Choice (1 pt)  |
| Stimulus   |                         |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    |       |       |
| B    | ^     |       |
| C*   | 64    |       |
| D    |       |       |

Error Analysis

|                                         |                                            |
|-----------------------------------------|--------------------------------------------|
| <input type="checkbox"/> Guessing       | <input type="checkbox"/> Mixed Up Concepts |
| <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |

Learning from Mistakes  
Instructional Implications

**7.4(A)** represent constant rates of change in mathematical and real-world problems given pictorial, tabular, verbal, numeric, graphical, and algebraic representations, including  $d = rt$

2025 – Q31

A gray whale eats about 130,000 kilograms of food during a 130-day feeding season. Which equation best represents  $k$ , the number of kilograms of food a gray whale eats in  $d$  days?

- ☒ Ⓐ  $k = 1,000d$
- ☐ Ⓑ  $k = 10,000d$
- ☐ Ⓒ  $k = 130,000d$
- ☐ Ⓓ  $k = 130d$

**\* Correct Answer (A)**  
**^highly chosen incorrect answer (B,C)**

| Analysis of Assessed Standards                       |                                            |       |
|------------------------------------------------------|--------------------------------------------|-------|
| Cluster                                              | Proportional Reasoning                     |       |
| Subcluster                                           | Constant Rate of Change                    |       |
| Content                                              | Readiness                                  |       |
| Process                                              |                                            |       |
| Item Type                                            | Multiple Choice (1 pt)                     |       |
| Stimulus                                             |                                            |       |
|                                                      |                                            |       |
| Data Analysis                                        |                                            |       |
| Item                                                 | State                                      | Local |
| A*                                                   | 47                                         |       |
| B                                                    | ^                                          |       |
| C                                                    | ^                                          |       |
| D                                                    |                                            |       |
| Error Analysis                                       |                                            |       |
| <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts |       |
| <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early |       |
| Learning from Mistakes<br>Instructional Implications |                                            |       |
|                                                      |                                            |       |

7.4(B) calculate unit rates from rates in mathematical and real-world problems

Analysis of Assessed Standards

2025 – Q2

A store sells 12 pairs of socks for \$15. What is the price per pair of socks?

Move the correct answer to each box. Not all answers will be used.

divide multiply 0.80 1.25 12 15

To calculate the price per pair of socks,  the number  by the number .

The price is \$  per pair of socks.

|            |                         |
|------------|-------------------------|
| Cluster    | Proportional Reasoning  |
| Subcluster | Constant Rate of Change |
| Content    | Supporting              |
| Process    |                         |
| Item Type  | Drag and Drop (2 pts)   |
| Stimulus   |                         |

Data Analysis

| Item           | State | Local |
|----------------|-------|-------|
| Full Credit    | 42    |       |
| No Credit      | 26    |       |
| Partial Credit | 32    |       |
|                |       |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes

Instructional Implications

\* Correct Answer (divide; 15; 12; 1.25)

**7.4(D)** solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems

Analysis of Assessed Standards



2025 – Q7

A student is paid \$12 per hour at his job. After a year, the student’s pay increases to \$15 per hour.  
What is the percent increase in the student’s hourly pay?

- ☐ A 3%
- ☐ B 15%
- ☐ C 25%
- ☐ D 18%

|            |                          |
|------------|--------------------------|
| Cluster    | Proportional Reasoning   |
| Subcluster | Ratios/Rates/Percentages |
| Content    | Readiness                |
| Process    |                          |
| Item Type  | Multiple Choice (1 pt)   |
| Stimulus   |                          |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    | ^     |       |
| B    |       |       |
| C*   | 33    |       |
| D    |       |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

\*Correct Answer (C)  
^highly chosen incorrect answer (A)

**7.4(D)** solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems

2025 – Q38

A cashier can scan 45 items in 8 minutes. At this rate, how many minutes would it take the cashier to scan 36 items?

- ☐ Ⓐ 5.625 min
- ☐ Ⓑ 6.4 min
- ☐ Ⓒ 1.25 min
- ☐ Ⓓ 4.5 min

\* Correct Answer (B)  
^highly chosen incorrect answer (A)

Analysis of Assessed Standards

|            |                          |
|------------|--------------------------|
| Cluster    | Proportional Reasoning   |
| Subcluster | Ratios/Rates/Percentages |
| Content    | Readiness                |
| Process    |                          |
| Item Type  | Multiple Choice (1 pt)   |
| Stimulus   |                          |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    | ^     |       |
| B*   | 51    |       |
| C    |       |       |
| D    |       |       |

Error Analysis

☐ Guessing

☐ Mixed Up Concepts

☐ Careless Error

☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

**7.7(A)** represent linear relationships using verbal descriptions, tables, graphs, and equations that simplify to the form  $y = mx + b$

2025 – Q9

Kenny spends the same amount of money from his bank account each week. The equation shown can be used to represent  $y$ , the amount of money in Kenny's bank account, and  $x$ , the number of weeks that Kenny has been spending money.

$$y = -35x + 500$$

Which statement best describes Kenny's bank account?

- ☐ Ⓐ From a beginning balance of \$500, Kenny's account decreases by \$35 per week.
- ☐ Ⓑ From a beginning balance of \$500, Kenny's account increases by \$35 per week.
- ☐ Ⓒ From a beginning balance of \$35, Kenny's account decreases by \$500 per week.
- ☐ Ⓓ From a beginning balance of \$35, Kenny's account increases by \$500 per week.

**\* Correct Answer (A)**  
**^highly chosen incorrect answer (B)**

Analysis of Assessed Standards

|            |                                                      |
|------------|------------------------------------------------------|
| Cluster    | Proportional Reasoning                               |
| Subcluster | Conceptual Development of Non-Proportional Reasoning |
| Content    | Readiness                                            |
| Process    |                                                      |
| Item Type  | Multiple Choice (1 pt)                               |
| Stimulus   |                                                      |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A*   | 63    |       |
| B    | ^     |       |
| C    |       |       |
| D    |       |       |

Error Analysis

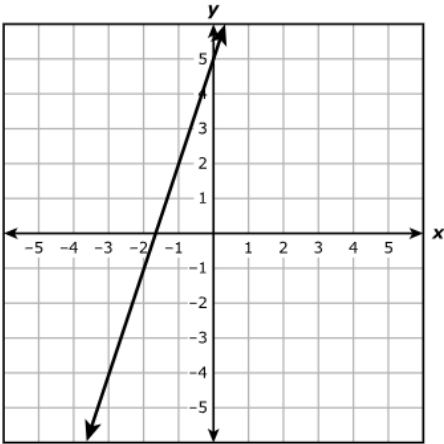
- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

7.7(A) represent linear relationships using verbal descriptions, tables, graphs, and equations that simplify to the form  $y = mx + b$

2025 – Q21

A relationship between  $x$  and  $y$  is shown on the graph.



Complete the equation that best describes the relationship between  $x$  and  $y$ .  
Choose the correct answer from each drop-down menu to complete the equation.

$y =$    $x +$

\*Correct Answer (3; 5)

| Analysis of Assessed Standards                    |                                                      |       |
|---------------------------------------------------|------------------------------------------------------|-------|
| Cluster                                           | Proportional Reasoning                               |       |
| Subcluster                                        | Conceptual Development of Non-Proportional Reasoning |       |
| Content                                           | Readiness                                            |       |
| Process                                           |                                                      |       |
| Item Type                                         | Inline Choice (2 pts)                                |       |
| Stimulus                                          |                                                      |       |
|                                                   |                                                      |       |
| Data Analysis                                     |                                                      |       |
| Item                                              | State                                                | Local |
| Full Credit                                       | 11                                                   |       |
| No Credit                                         | 54                                                   |       |
| Partial Credit                                    | 35                                                   |       |
|                                                   |                                                      |       |
| Error Analysis                                    |                                                      |       |
| <input type="checkbox"/> Guessing                 | <input type="checkbox"/> Mixed Up Concepts           |       |
| <input type="checkbox"/> Careless Error           | <input type="checkbox"/> Stopped Too Early           |       |
| Learning from Mistakes Instructional Implications |                                                      |       |
|                                                   |                                                      |       |

# Probability

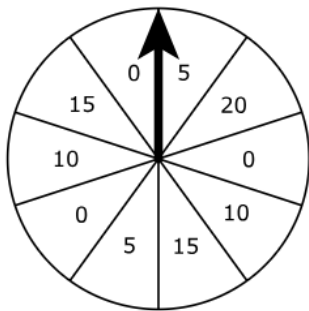
**7.6 Proportionality** The student applies mathematical process standards to use probability and statistics to describe or solve problems involving proportional relationships.

**7.6(D)** make predictions and determine solutions using theoretical probability for simple and compound events

2025 – Q6

The spinner shown is divided into 10 sections of equal size:

- Each section contains a number.
- The arrow is spun 150 times during a game.



Complete the sentences to best predict the results of the spins during the game.  
Choose the correct answer from each drop-down menu to complete the sentences.

The arrow will land on 20 about .

The arrow will land on either 0 or 5 about .

**\*Correct Answer (15 times; 75 times)**

Analysis of Assessed Standards

|            |                            |
|------------|----------------------------|
| Cluster    | Probability                |
| Subcluster | Application of Probability |
| Content    | Supporting                 |
| Process    |                            |
| Item Type  | Inline Choice (2 pts)      |
| Stimulus   |                            |

Data Analysis

| Item           | State | Local |
|----------------|-------|-------|
| Full Credit    | 33    |       |
| No Credit      | 33    |       |
| Partial Credit | 34    |       |
|                |       |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

**7.6(H)** solve problems using qualitative and quantitative predictions and comparisons from simple experiments

2025 – Q1

The manager of an ice-cream shop randomly surveyed 70 children to find out their favorite flavor of ice cream. The results of the survey are shown in the table.

| Favorite Ice-Cream Flavor |                    |
|---------------------------|--------------------|
| Flavor                    | Number of Children |
| Vanilla                   | 16                 |
| Chocolate                 | 28                 |
| Strawberry                | 12                 |
| Orange sherbet            | 14                 |

Based on the results in the table, which statement is true about the next 350 children surveyed about their favorite ice-cream flavor?

- ☐ Ⓐ The number of children who select vanilla will be twice the number of children who select strawberry.
- ☐ Ⓑ The number of children who select vanilla will be twice the number of children who select orange sherbet.
- ☐ Ⓒ The number of children who select chocolate will be twice the number of children who select orange sherbet.
- ☐ Ⓓ The number of children who select orange sherbet will be twice the number of children who select strawberry.

\* Correct Answer (C )  
^highly chosen incorrect answer (B)

Analysis of Assessed Standards

|            |                            |
|------------|----------------------------|
| Cluster    | Probability                |
| Subcluster | Application of Probability |
| Content    | Readiness                  |
| Process    |                            |
| Item Type  | Multiple Choice (1 pt)     |
| Stimulus   |                            |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    |       |       |
| B    | ^     |       |
| C*   | 78    |       |
| D    |       |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

**7.6(H)** solve problems using qualitative and quantitative predictions and comparisons from simple experiments

 2025 – Q19

A grocery store manager randomly surveyed 100 customers about their favorite vegetable. The results are displayed in the table.

| Favorite Vegetable |           |
|--------------------|-----------|
| Vegetable          | Frequency |
| Potatoes           | 24        |
| Broccoli           | 16        |
| Corn               | 36        |
| Green beans        | 24        |

If the manager surveys another 50 customers, which prediction is supported by the information in the table?

- ☐ Ⓐ Customers will choose broccoli  $\frac{1}{4}$  of the time.
- ☐ Ⓑ Customers will choose corn  $1\frac{1}{2}$  times as often as green beans.
- ☐ Ⓒ The number of customers who choose potatoes will be 8 times the number who choose broccoli.
- ☐ Ⓓ The number of customers who choose corn will be 6 less than the number who choose potatoes.

**\* Correct Answer (B)**  
**^highly chosen incorrect answer (C)**

Analysis of Assessed Standards

|            |                            |
|------------|----------------------------|
| Cluster    | Probability                |
| Subcluster | Application of Probability |
| Content    | Readiness                  |
| Process    |                            |
| Item Type  | Multiple Choice (1 pt)     |
| Stimulus   |                            |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    |       |       |
| B*   | 45    |       |
| C    | ^     |       |
| D    |       |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

**7.6(I)** determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces

2025 – Q13

A box contains 5 colors of key chains. Kayden randomly selects a key chain from the box, records its color, and then returns the key chain to the box. He does this 40 times. The results are shown in the table.

| Key Chains |           |
|------------|-----------|
| Color      | Frequency |
| Red        | 7         |
| Orange     | 9         |
| Yellow     | 5         |
| Green      | 8         |
| Blue       | 11        |

Based on Kayden’s results, what is the experimental probability that the next key chain he selects will be yellow or green?

- A

$\frac{1}{5}$

B

$\frac{13}{40}$

C

$\frac{2}{5}$

D

$\frac{3}{40}$

\* Correct Answer (B)  
^highly chosen incorrect answer (C)

Analysis of Assessed Standards

|            |                              |
|------------|------------------------------|
| Cluster    | Probability                  |
| Subcluster | Determination of Probability |
| Content    | Readiness                    |
| Process    |                              |
| Item Type  | Multiple Choice (1 pt)       |
| Stimulus   |                              |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    |       |       |
| B*   | 60    |       |
| C    | ^     |       |
| D    |       |       |

Error Analysis

- ☐ Guessing

☐ Careless Error
- ☐ Mixed Up Concepts

☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

**7.6(I)** determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces

2025 – Q24

A deck of cards contains red, orange, yellow, and green cards. For each color, there are 10 cards labeled 0 through 9.

What is the probability of randomly selecting a red card, replacing the card, and then randomly selecting a card labeled 0?

- ☐ Ⓐ  $\frac{1}{40}$
- ☐ Ⓑ  $\frac{1}{20}$
- ☐ Ⓒ  $\frac{13}{40}$
- ☐ Ⓓ  $\frac{7}{20}$

\* Correct Answer (A)  
^highly chosen incorrect answer (B)

Analysis of Assessed Standards

|            |                              |
|------------|------------------------------|
| Cluster    | Probability                  |
| Subcluster | Determination of Probability |
| Content    | Readiness                    |
| Process    |                              |
| Item Type  | Multiple Choice (1 pt)       |
| Stimulus   |                              |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A*   | 33    |       |
| B    | ^     |       |
| C    |       |       |
| D    |       |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

# Equations and Inequalities

**7.10 Expressions, equations, and relationships.** The student applies mathematical process standards to use one-variable equations and inequalities to represent situations.

**7.11 Expressions, equations, and relationships.** The student applies mathematical process standards to solve one-variable equations and inequalities.

**7.10(A)** write one-variable, two-step equations and inequalities to represent constraints or conditions within problems

2025 – Q28

The employee offices and break room in an office building cover an area of 7,000 square feet. Each employee office takes up 125 square feet, and the break room takes up 750 square feet.

Which equation can be used to find  $x$ , the number of employee offices?

- ☐ Ⓐ  $125x + 750 = 7,000$
- ☐ Ⓑ  $750x + 125 = 7,000$
- ☐ Ⓒ  $125x - 750 = 7,000$
- ☐ Ⓓ  $750x - 125 = 7,000$

**\* Correct Answer (A)**  
**^highly chosen incorrect answer (B,C)**

Analysis of Assessed Standards

|            |                                       |
|------------|---------------------------------------|
| Cluster    | Equations and Inequalities            |
| Subcluster | Application of Equations/Inequalities |
| Content    | Supporting                            |
| Process    |                                       |
| Item Type  | Multiple Choice (1 pt)                |
| Stimulus   |                                       |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A*   | 54    |       |
| B    | ^     |       |
| C    | ^     |       |
| D    |       |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

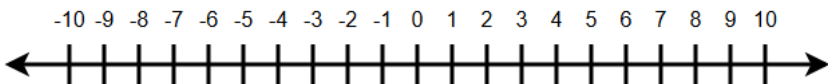
**7.10(B)** represent solutions for one-variable, two-step equations and inequalities on number lines

2025 – Q25

Create a number line that best represents the solution to the inequality shown.

$-6k + 6 < -48$

Select a ray. Move the point on the ray to the correct place on the number line.



<

●

<

○

○

→

●

→

| Analysis of Assessed Standards                       |                                                        |       |
|------------------------------------------------------|--------------------------------------------------------|-------|
| Cluster                                              | Equations and Inequalities                             |       |
| Subcluster                                           | Representation and Solutions of Equations/Inequalities |       |
| Content                                              | Supporting                                             |       |
| Process                                              |                                                        |       |
| Item Type                                            | Number Line (2 pts)                                    |       |
| Stimulus                                             |                                                        |       |
|                                                      |                                                        |       |
| Data Analysis                                        |                                                        |       |
| Item                                                 | State                                                  | Local |
| Full Credit                                          | 11                                                     |       |
| No Credit                                            | 66                                                     |       |
| Partial Credit                                       | 23                                                     |       |
|                                                      |                                                        |       |
| Error Analysis                                       |                                                        |       |
| <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts             |       |
| <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early             |       |
| Learning from Mistakes<br>Instructional Implications |                                                        |       |
|                                                      |                                                        |       |

\*Correct Answer (Open endpoint on 9 and arrow to the right)

7.11(A) model and solve one-variable, two-step equations and inequalities

Analysis of Assessed Standards

2025 – Q16

Arnold can spend no more than \$450 on a party at a movie theater. The fee to rent the theater is \$150, and the food will cost \$12 per guest.

What is the solution set that represents  $x$ , the number of guests that can attend the party?

- ☐ Ⓐ  $x \geq 50$
- ☐ Ⓑ  $x \leq 50$
- ☐ Ⓒ  $x \geq 25$
- ☐ Ⓓ  $x \leq 25$

|            |                                                        |
|------------|--------------------------------------------------------|
| Cluster    | Equations and Inequalities                             |
| Subcluster | Representation and Solutions of Equations/Inequalities |
| Content    | Readiness                                              |
| Process    |                                                        |
| Item Type  | Multiple Choice (1 pt)                                 |
| Stimulus   |                                                        |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    |       |       |
| B    |       |       |
| C    | ^     |       |
| D*   | 37    |       |

|                                         |                                            |
|-----------------------------------------|--------------------------------------------|
| Error Analysis                          |                                            |
| <input type="checkbox"/> Guessing       | <input type="checkbox"/> Mixed Up Concepts |
| <input type="checkbox"/> Careless Error | <input type="checkbox"/> Stopped Too Early |

Learning from Mistakes  
Instructional Implications

\* Correct Answer (D)  
^highly chosen incorrect answer (C)

7.11(A) model and solve one-variable, two-step equations and inequalities

!

2025 – Q33

What is the solution to  $3x + 2x + 20 = 50$ ?

A

$x = 6$

B

$x = 14$

C

$x = 5$

D

$x = 25$

\* Correct Answer (A)

^highly chosen incorrect answer (D)

Analysis of Assessed Standards

|            |                                                        |  |
|------------|--------------------------------------------------------|--|
| Cluster    | Equations and Inequalities                             |  |
| Subcluster | Representation and Solutions of Equations/Inequalities |  |
| Content    | Readiness                                              |  |
| Process    |                                                        |  |
| Item Type  | Multiple Choice (1 pt)                                 |  |
| Stimulus   |                                                        |  |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A*   | 51    |       |
| B    |       |       |
| C    |       |       |
| D    | ^     |       |

Error Analysis

☐ Guessing

☐ Mixed Up Concepts

☐ Careless Error

☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

# Geometry and Measurement

**7.5 Proportionality.** The student applies mathematical process standards to use geometry to describe or solve problems involving proportional relationships.

**7.8 Expressions, equations, and relationships.** The student applies mathematical process standards to develop geometric relationships with volume.

**7.9 Expressions, equations, and relationships.** The student applies mathematical process standards to solve geometric problems.

**Connected Knowledge and Skills 7.4, 7.11**

**7.4(E)** convert between measurement systems, including the use of proportions and the use of unit rates

2025 – Q37

The length of a football field is 120 yards. There are approximately 55 meters in 60 yards.

Complete the sentences to create true statements about the measurement closest to the length of a football field in meters.

Move the correct answer to each box. Not all answers will be used.

60

120

55

60

60

55

120

60

60

110

131

240

To find  $x$ , the approximate length of a football field in meters, solve the proportion  $\frac{x}{120} = \frac{\phantom{00}}{\phantom{00}}$ .

The length of a football field is approximately  $\frac{\phantom{00}}{\phantom{00}}$  meters.

**\*Correct Answer (55/60; 110)**

Analysis of Assessed Standards

|            |                          |
|------------|--------------------------|
| Cluster    | Geometry and Measurement |
| Subcluster | Conversions              |
| Content    | Supporting               |
| Process    |                          |
| Item Type  | Drag and Drop (2 pts)    |
| Stimulus   |                          |

Data Analysis

| Item           | State | Local |
|----------------|-------|-------|
| Full Credit    | 35    |       |
| No Credit      | 35    |       |
| Partial Credit | 30    |       |
|                |       |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

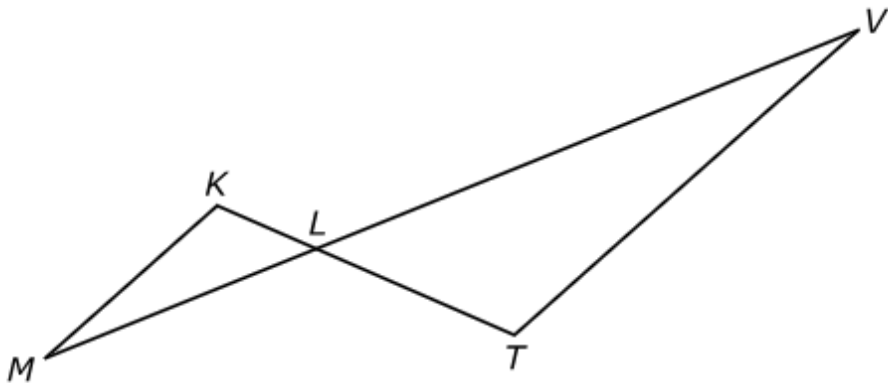
Learning from Mistakes  
Instructional Implications

|                                          |        |      |
|------------------------------------------|--------|------|
| IQ Analysis   Investigating the Question | 7.5(A) | RC 3 |
|------------------------------------------|--------|------|

7.5(A) generalize the critical attributes of similarity, including ratios within and between similar shapes

2025 – Q32

Triangle *KLM* is similar to triangle *TLV*.



Which statement about the triangles must be true?

☒  $\frac{KL}{LM} = \frac{LV}{TL}$

☐  $\frac{ML}{MK} = \frac{VL}{VT}$

☐ Angle *K* is congruent to angle *V*.

☐ Angle *T* is congruent to angle *M*.

\*Correct Answer (B)  
^highly chosen incorrect answer (A)

Analysis of Assessed Standards

|            |                          |
|------------|--------------------------|
| Cluster    | Geometry and Measurement |
| Subcluster | Similarity               |
| Content    | Supporting               |
| Process    |                          |
| Item Type  | Multiple Choice (1 pt)   |
| Stimulus   |                          |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    | ^     |       |
| B*   | 57    |       |
| C    |       |       |
| D    |       |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

|                                          |        |      |
|------------------------------------------|--------|------|
| IQ Analysis   Investigating the Question | 7.5(B) | RC 3 |
|------------------------------------------|--------|------|

7.5(B) describe  $\pi$  as the ratio of the circumference of a circle to its diameter

!

2025 – Q14

A circular pool has a radius of 30 feet and a circumference of approximately 188.4 feet. Complete the sentence to best represent  $\pi$ .

Move the correct answer to each box. Not all answers will be used.

30

60

188.4

900

3,600

The value of  $\pi$  is approximately  divided by .

\*Correct Answer (188.4; 60)

Analysis of Assessed Standards

|               |                          |       |
|---------------|--------------------------|-------|
| Cluster       | Geometry and Measurement |       |
| Subcluster    | Circles                  |       |
| Content       | Supporting               |       |
| Process       |                          |       |
| Item Type     | Drag and Drop (1 pt)     |       |
| Stimulus      |                          |       |
|               |                          |       |
| Data Analysis |                          |       |
| Item          | State                    | Local |
| Full Credit   | 24                       |       |
| No Credit     | 76                       |       |
|               |                          |       |
|               |                          |       |

Error Analysis

☐ Guessing

☐ Mixed Up Concepts

☐ Careless Error

☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

|                                          |        |      |
|------------------------------------------|--------|------|
| IQ Analysis   Investigating the Question | 7.5(C) | RC 3 |
|------------------------------------------|--------|------|

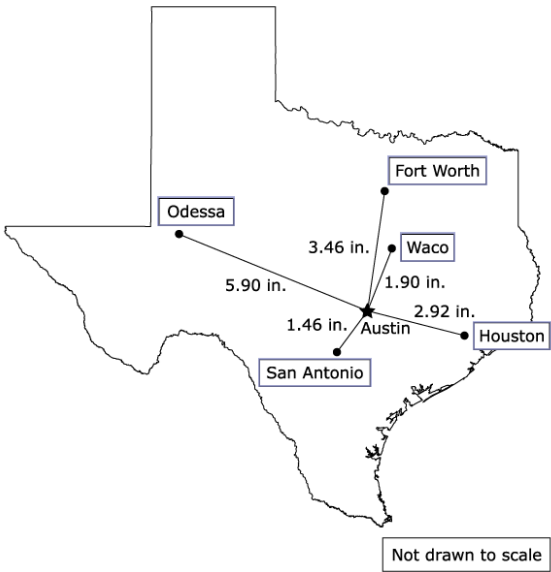
**7.5(C)** solve mathematical and real-world problems involving similar shape and scale drawings

 2025 – Q10

Leila lives in Austin and visited another city in Texas that is 146 miles away. The map shown uses a scale where 0.5 inch represents 25 miles.

Use the map to select the name of the city that Leila visited.

Select **ONE** correct answer.



**\*Correct Answer (Houston)**

Analysis of Assessed Standards

|            |                          |
|------------|--------------------------|
| Cluster    | Geometry and Measurement |
| Subcluster | Similarity               |
| Content    | Readiness                |
| Process    |                          |
| Item Type  | Hot Spot (1 pt)          |
| Stimulus   |                          |

Data Analysis

| Item        | State | Local |
|-------------|-------|-------|
| Full Credit | 41    |       |
| No Credit   | 59    |       |
|             |       |       |
|             |       |       |

Error Analysis

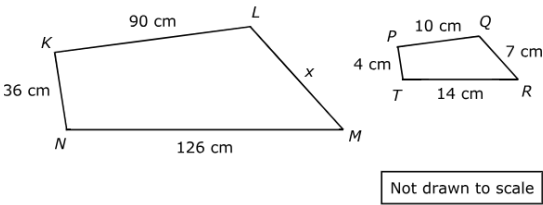
- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

7.5(C) solve mathematical and real-world problems involving similar shape and scale drawings

2025 – Q20

Quadrilateral  $KL MN$  is similar to quadrilateral  $PQRT$ . Some of the side lengths for the quadrilaterals are shown in centimeters.



What is the value of  $x$  in centimeters?

- A  $x = \frac{7}{9}$
- B  $x = \frac{4}{9}$
- C  $x = 36$
- D  $x = 63$

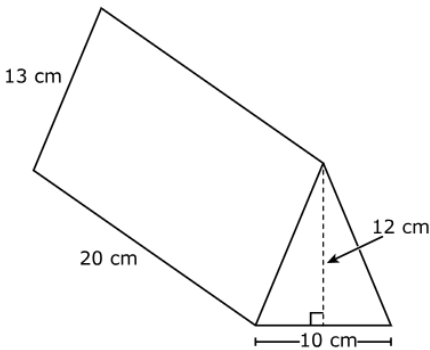
\* Correct Answer (D)  
^highly chosen incorrect answer (C)

| Analysis of Assessed Standards                       |                                            |       |
|------------------------------------------------------|--------------------------------------------|-------|
| Cluster                                              | Geometry and Measurement                   |       |
| Subcluster                                           | Similarity                                 |       |
| Content                                              | Readiness                                  |       |
| Process                                              |                                            |       |
| Item Type                                            | Multiple Choice (1 pt)                     |       |
| Stimulus                                             |                                            |       |
|                                                      |                                            |       |
| Data Analysis                                        |                                            |       |
| Item                                                 | State                                      | Local |
| A                                                    |                                            |       |
| B                                                    |                                            |       |
| C                                                    | ^                                          |       |
| D*                                                   | 55                                         |       |
| Error Analysis                                       |                                            |       |
| <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts |       |
| <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early |       |
| Learning from Mistakes<br>Instructional Implications |                                            |       |
|                                                      |                                            |       |

**7.9(A)** solve problems involving the volume of rectangular prisms, triangular prisms, rectangular pyramids, and triangular pyramids

2025 – Q5

A chocolate bar in the shape of a triangular prism is shown with its dimensions in centimeters.



What is the volume of the chocolate bar in cubic centimeters?

- ☐ Ⓐ 1,300 cm<sup>3</sup>
- ☐ Ⓑ 2,600 cm<sup>3</sup>
- ☐ Ⓒ 2,400 cm<sup>3</sup>
- ☐ Ⓓ 1,200 cm<sup>3</sup>

**\* Correct Answer (D)**  
**^highly chosen incorrect answer (C)**

Analysis of Assessed Standards

|            |                          |
|------------|--------------------------|
| Cluster    | Geometry and Measurement |
| Subcluster | Volume                   |
| Content    | Readiness                |
| Process    |                          |
| Item Type  | Multiple Choice (1 pt)   |
| Stimulus   |                          |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    |       |       |
| B    |       |       |
| C    | ^     |       |
| D*   | 36    |       |

Error Analysis

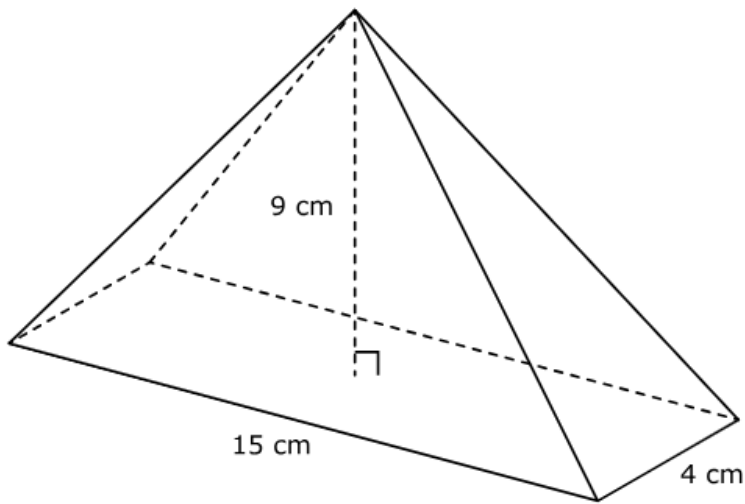
- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

**7.9(A)** solve problems involving the volume of rectangular prisms, triangular prisms, rectangular pyramids, and triangular pyramids

2025 – Q26

A rectangular pyramid is shown with its dimensions in centimeters.



What is the volume of the rectangular pyramid in cubic centimeters?

(A) 114 cm<sup>3</sup>

(B) 342 cm<sup>3</sup>

(C) 180 cm<sup>3</sup>

(D) 540 cm<sup>3</sup>

\* Correct Answer (C)  
^highly chosen incorrect answer (D)

Analysis of Assessed Standards

|            |                          |
|------------|--------------------------|
| Cluster    | Geometry and Measurement |
| Subcluster | Volume                   |
| Content    | Readiness                |
| Process    |                          |
| Item Type  | Multiple Choice (1 pt)   |
| Stimulus   |                          |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    |       |       |
| B    |       |       |
| C*   | 53    |       |
| D    | ^     |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

7.9(B) determine the circumference and area of circles

!

2025 – Q8

A circular sign has a diameter of 20 inches. Determine the measurements that are closest to the area of the sign in square inches and the circumference of the sign in inches.

Move the correct answer to each box. Not all answers will be used.

31631263146281,256

Area of sign:  in.<sup>2</sup>

Circumference of sign:  in.

\*Correct Answer (314; 63)

Analysis of Assessed Standards

|            |                          |
|------------|--------------------------|
| Cluster    | Geometry and Measurement |
| Subcluster | Circles                  |
| Content    | Readiness                |
| Process    |                          |
| Item Type  | Drag and Drop (2 pts)    |
| Stimulus   |                          |

Data Analysis

| Item           | State | Local |
|----------------|-------|-------|
| Full Credit    | 21    |       |
| No Credit      | 43    |       |
| Partial Credit | 36    |       |
|                |       |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

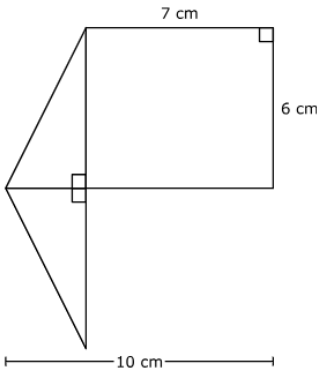
| 7.9(B) determine the circumference and area of circles                                                                                                                                                                                                                                                                                                                                 |                                                      | Analysis of Assessed Standards |                                            |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|--------------------------------|--------------------------------------------|--|
| <div>2025 – Q29</div> <div>The circumference of the base of a cylinder is approximately 94.2 feet. Which measurement is closest to the diameter, <math>d</math>, of the cylinder in feet?</div> <div><div><div>A 11 ft</div><div>B 30 ft</div><div>C 15 ft</div><div>D 60 ft</div></div></div> <div><div>*Correct Answer (B)</div><div>^highly chosen incorrect answer (C)</div></div> | Cluster                                              | Geometry and Measurement       |                                            |  |
|                                                                                                                                                                                                                                                                                                                                                                                        | Subcluster                                           | Circles                        |                                            |  |
|                                                                                                                                                                                                                                                                                                                                                                                        | Content                                              | Readiness                      |                                            |  |
|                                                                                                                                                                                                                                                                                                                                                                                        | Process                                              |                                |                                            |  |
|                                                                                                                                                                                                                                                                                                                                                                                        | Item Type                                            | Multiple Choice (1 pt)         |                                            |  |
|                                                                                                                                                                                                                                                                                                                                                                                        | Stimulus                                             |                                |                                            |  |
|                                                                                                                                                                                                                                                                                                                                                                                        | Data Analysis                                        |                                |                                            |  |
|                                                                                                                                                                                                                                                                                                                                                                                        | Item                                                 | State                          | Local                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                        | A                                                    |                                |                                            |  |
|                                                                                                                                                                                                                                                                                                                                                                                        | B*                                                   | 60                             |                                            |  |
|                                                                                                                                                                                                                                                                                                                                                                                        | C                                                    | ^                              |                                            |  |
|                                                                                                                                                                                                                                                                                                                                                                                        | D                                                    |                                |                                            |  |
|                                                                                                                                                                                                                                                                                                                                                                                        | Error Analysis                                       |                                |                                            |  |
|                                                                                                                                                                                                                                                                                                                                                                                        | <input type="checkbox"/> Guessing                    |                                | <input type="checkbox"/> Mixed Up Concepts |  |
|                                                                                                                                                                                                                                                                                                                                                                                        | <input type="checkbox"/> Careless Error              |                                | <input type="checkbox"/> Stopped Too Early |  |
|                                                                                                                                                                                                                                                                                                                                                                                        | Learning from Mistakes<br>Instructional Implications |                                |                                            |  |
|                                                                                                                                                                                                                                                                                                                                                                                        |                                                      |                                |                                            |  |

**7.9(C)** determine the area of composite figures containing combinations of rectangles, squares, parallelograms, trapezoids, triangles, semicircles, and quarter circles

Analysis of Assessed Standards

2025 – Q12

A composite figure consists of 2 congruent right triangles and a rectangle. The figure and its dimensions in centimeters are shown.



What is the area of the figure in square centimeters?  
Enter your answer in the box provided.

cm<sup>2</sup>

1

2

3

4

5

6

7

8

9

0

.

-

**\*Correct Answer (60)**

|            |                          |
|------------|--------------------------|
| Cluster    | Geometry and Measurement |
| Subcluster | Area                     |
| Content    | Readiness                |
| Process    |                          |
| Item Type  | Equation Editor (1 pt)   |
| Stimulus   |                          |

Data Analysis

| Item        | State | Local |
|-------------|-------|-------|
| Full Credit | 27    |       |
| No Credit   | 73    |       |
|             |       |       |
|             |       |       |

Error Analysis

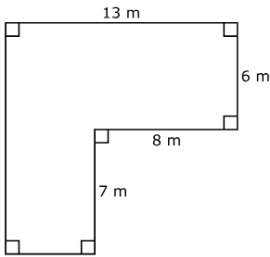
- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

**7.9(C)** determine the area of composite figures containing combinations of rectangles, squares, parallelograms, trapezoids, triangles, semicircles, and quarter circles

2025 – Q22

A composite figure is made up of two rectangles. The figure and its dimensions in meters are shown in the diagram.



What is the area of the composite figure in square meters?

- ☐ A 52 m<sup>2</sup>
- ☐ B 113 m<sup>2</sup>
- ☐ C 134 m<sup>2</sup>
- ☐ D 143 m<sup>2</sup>

**\* Correct Answer (B)**  
**^highly chosen incorrect answer (C)**

Analysis of Assessed Standards

|            |                          |
|------------|--------------------------|
| Cluster    | Geometry and Measurement |
| Subcluster | Area                     |
| Content    | Readiness                |
| Process    |                          |
| Item Type  | Multiple Choice (1 pt)   |
| Stimulus   |                          |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    |       |       |
| B*   | 50    |       |
| C    | ^     |       |
| D    |       |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

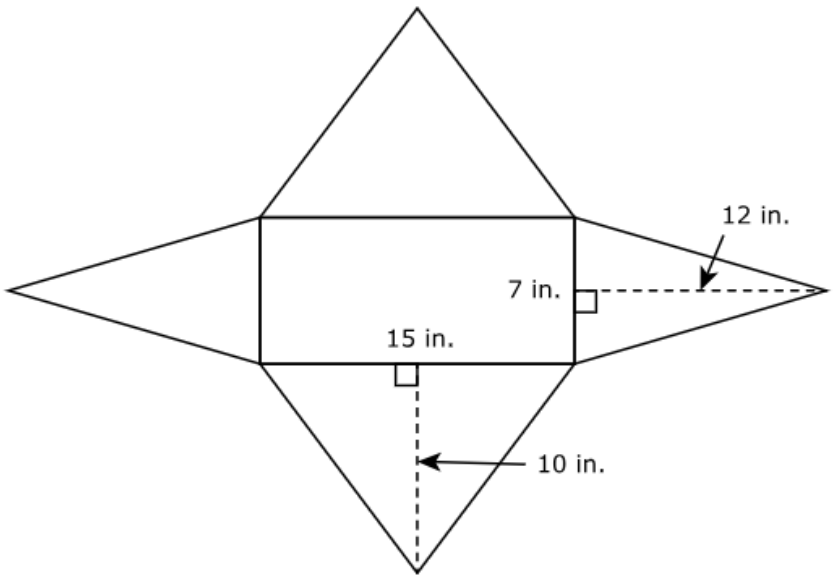
Learning from Mistakes  
Instructional Implications

|                                          |        |      |
|------------------------------------------|--------|------|
| IQ Analysis   Investigating the Question | 7.9(D) | RC 3 |
|------------------------------------------|--------|------|

**7.9(D)** solve problems involving the lateral and total surface area of a rectangular prism, rectangular pyramid, triangular prism, and triangular pyramid by determining the area of the shape's net

2025 – Q35

The net of a rectangular pyramid and its dimensions in inches are shown.



What is the total surface area of the pyramid in square inches?

☐ A 339 in.<sup>2</sup>

☐ B 525 in.<sup>2</sup>

☐ C 573 in.<sup>2</sup>

☐ D 420 in.<sup>2</sup>

\* Correct Answer (A)  
^highly chosen incorrect answer (B)

Analysis of Assessed Standards

|            |                          |
|------------|--------------------------|
| Cluster    | Geometry and Measurement |
| Subcluster | Area                     |
| Content    | Supporting               |
| Process    |                          |
| Item Type  | Multiple Choice (1 pt)   |
| Stimulus   |                          |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A*   | 44    |       |
| B    | ^     |       |
| C    |       |       |
| D    |       |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

**7.11(C)** write and solve equations using geometry concepts, including the sum of the angles in a triangle, and angle relationships

 2025 – Q18

One angle of an isosceles triangle measures  $50^\circ$ , and each of the other angles measures  $x^\circ$ .

What is the value of  $x$ ?

☐ A  $x = 65$

☐ B  $x = 115$

☐ C  $x = 40$

☐ D  $x = 130$

\* Correct Answer (A)  
^highly chosen incorrect answer (C)

Analysis of Assessed Standards

|            |                          |
|------------|--------------------------|
| Cluster    | Geometry and Measurement |
| Subcluster | Angle Relationships      |
| Content    | Supporting               |
| Process    |                          |
| Item Type  | Multiple Choice (1 pt)   |
| Stimulus   |                          |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A*   | 40    |       |
| B    |       |       |
| C    | ^     |       |
| D    |       |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

# Data Analysis

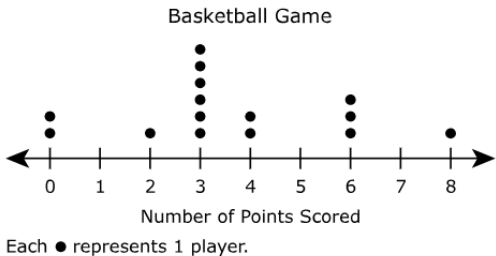
**7.12 Measurement and data.** The student applies mathematical process standards to use statistical representations to analyze data.

**Connected Knowledge and Skills 7.6**

**7.6(G)** solve problems using data represented in bar graphs, dot plots, and circle graphs, including part-to-whole and part-to-part comparisons and equivalents

 2025 – Q15

The dot plot shows the number of points scored by each player on a basketball team during a game.



Which statement is **NOT** supported by the information shown in the dot plot?

- ☐ A Exactly 20% of the players scored 6 points during the game.
- ☐ B Exactly 40% of the players scored 3 points during the game.
- ☐ C Less than  $\frac{1}{3}$  of the players scored 4 points during the game.
- ☐ D More than  $\frac{1}{10}$  of the players scored 8 points during the game.

\* Correct Answer (D)  
^highly chosen incorrect answer (B)

Analysis of Assessed Standards

|            |                        |
|------------|------------------------|
| Cluster    | Data Analysis          |
| Subcluster | Interpretation of Data |
| Content    | Readiness              |
| Process    |                        |
| Item Type  | Multiple Choice (1 pt) |
| Stimulus   |                        |

Data Analysis

| Item | State | Local |
|------|-------|-------|
| A    |       |       |
| B    | ^     |       |
| C    |       |       |
| D*   | 36    |       |

Error Analysis

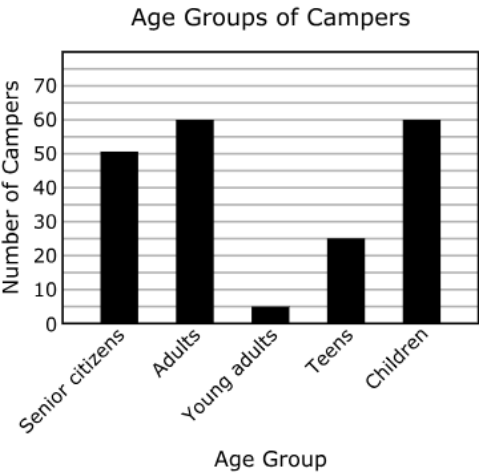
- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

**7.6(G)** solve problems using data represented in bar graphs, dot plots, and circle graphs, including part-to-whole and part-to-part comparisons and equivalents

2025 – Q30

The bar graph shows the age groups of campers at a state park over a weekend.



What part of the campers were young adults, teens, or children?

☐ A  $\frac{11}{20}$

☐ B  $\frac{3}{5}$

☐ C 45%

☐ D 90%

**\* Correct Answer (C)**  
**^highly chosen incorrect answer (B,D)**

**Analysis of Assessed Standards**

|            |                        |
|------------|------------------------|
| Cluster    | Data Analysis          |
| Subcluster | Interpretation of Data |
| Content    | Readiness              |
| Process    |                        |
| Item Type  | Multiple Choice (1 pt) |
| Stimulus   |                        |

**Data Analysis**

| Item | State | Local |
|------|-------|-------|
| A    |       |       |
| B    | ^     |       |
| C*   | 53    |       |
| D    | ^     |       |

**Error Analysis**

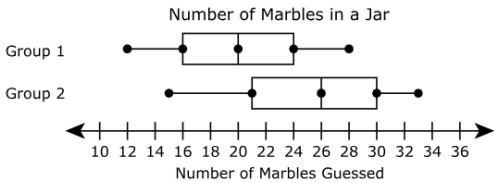
- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

**Learning from Mistakes  
Instructional Implications**

**7.12(A)** compare two groups of numeric data using comparative dot plots or box plots by comparing their shapes, centers, and spreads

2025 – Q17

Students in two groups were asked to guess the number of marbles in a jar. The box plots display each group’s responses.



Which statement is best supported by the information in the box plots?

- ☐ Ⓐ The range of the data for Group 2 is equal to the range of the data for Group 1.
- ☐ Ⓑ The distribution of the data for Group 1 is more symmetrical than the distribution of the data for Group 2.
- ☐ Ⓒ The interquartile range of the data for Group 1 is greater than the interquartile range of the data for Group 2.
- ☐ Ⓓ The median number of the data for Group 1 is greater than the median number of the data for Group 2.

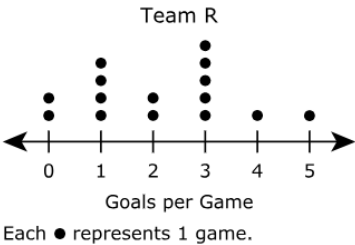
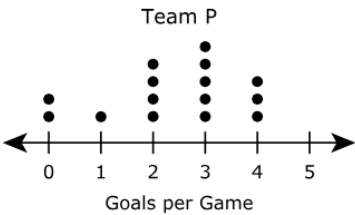
**\* Correct Answer (B)**  
**^highly chosen incorrect answer (C)**

| Analysis of Assessed Standards                       |                                            |       |
|------------------------------------------------------|--------------------------------------------|-------|
| Cluster                                              | Data Analysis                              |       |
| Subcluster                                           | Comparison of Data                         |       |
| Content                                              | Readiness                                  |       |
| Process                                              |                                            |       |
| Item Type                                            | Multiple Choice (1 pt)                     |       |
| Stimulus                                             |                                            |       |
|                                                      |                                            |       |
| Data Analysis                                        |                                            |       |
| Item                                                 | State                                      | Local |
| A                                                    |                                            |       |
| B*                                                   | 55                                         |       |
| C                                                    | ^                                          |       |
| D                                                    |                                            |       |
| Error Analysis                                       |                                            |       |
| <input type="checkbox"/> Guessing                    | <input type="checkbox"/> Mixed Up Concepts |       |
| <input type="checkbox"/> Careless Error              | <input type="checkbox"/> Stopped Too Early |       |
| Learning from Mistakes<br>Instructional Implications |                                            |       |
|                                                      |                                            |       |

**7.12(A)** compare two groups of numeric data using comparative dot plots or box plots by comparing their shapes, centers, and spreads

2025 – Q34

The dot plots show the number of goals scored in each game of the season by two soccer teams.



Choose the correct answer from each drop-down menu to complete the sentences.

The median is greater for .

The  is the same for the two sets of numbers.

**\*Correct Answer (Team P; mode)**

Analysis of Assessed Standards

|            |                       |
|------------|-----------------------|
| Cluster    | Data Analysis         |
| Subcluster | Comparison of Data    |
| Content    | Readiness             |
| Process    |                       |
| Item Type  | Inline Choice (2 pts) |
| Stimulus   |                       |

Data Analysis

| Item           | State | Local |
|----------------|-------|-------|
| Full Credit    | 39    |       |
| No Credit      | 19    |       |
| Partial Credit | 42    |       |
|                |       |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

# Personal Financial Literacy

**7.13 Personal financial literacy.** The student applies mathematical process standards to develop an economic way of thinking and problem solving useful in one's life as a knowledgeable consumer and investor.

**7.13(B)** identify the components of a personal budget, including income; planned savings for college, retirement, and emergencies; taxes; and fixed and variable expenses, and calculate what percentage each category comprises of the total budget

Analysis of Assessed Standards

2025 – Q27

Roberto's monthly budget is shown in the table.

| Roberto's Monthly Budget |            |
|--------------------------|------------|
| Category                 | Percentage |
| Savings                  | 8%         |
| Rent                     | 24%        |
| Car expenses             | 15%        |
| Utilities                | 12%        |
| Insurance                | 10%        |
| Cell phone/internet      | 8%         |
| Groceries                | 5%         |
| Miscellaneous            | 18%        |

Roberto's total monthly income is \$5,000. Complete the statement about Roberto's budget.

Move the correct answer to each box. Each answer may be used more than once.

less than

exactly

more than

Roberto spends  \$1,000 on rent each month and  \$500 on insurance each month.

\*Correct Answer (more than; exactly)

|            |                             |
|------------|-----------------------------|
| Cluster    | Personal Financial Literacy |
| Subcluster | Calculations                |
| Content    | Supporting                  |
| Process    |                             |
| Item Type  | Drag and Drop (2 pts)       |
| Stimulus   |                             |

Data Analysis

| Item           | State | Local |
|----------------|-------|-------|
| Full Credit    | 43    |       |
| No Credit      | 28    |       |
| Partial Credit | 29    |       |
|                |       |       |

Error Analysis

- ☐ Guessing
- ☐ Mixed Up Concepts
- ☐ Careless Error
- ☐ Stopped Too Early

Learning from Mistakes  
Instructional Implications

|    |  |  |                                            | Analysis of Assessed Standards |       |       |
|----|--|--|--------------------------------------------|--------------------------------|-------|-------|
|    |  |  |                                            | Cluster                        |       |       |
|    |  |  |                                            | Subcluster                     |       |       |
|    |  |  |                                            | Content                        |       |       |
|    |  |  |                                            | Process                        |       |       |
|    |  |  |                                            | Item Type                      |       |       |
|    |  |  |                                            | Stimulus                       |       |       |
|    |  |  |                                            |                                |       |       |
|    |  |  |                                            | Data Analysis                  |       |       |
|    |  |  |                                            | Item                           | State | Local |
|    |  |  |                                            |                                |       |       |
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|    |  |  | Error Analysis                             |                                |       |       |
|    |  |  | <input type="checkbox"/> Guessing          |                                |       |       |
|    |  |  | <input type="checkbox"/> Careless Error    |                                |       |       |
|    |  |  | <input type="checkbox"/> Stopped Too Early |                                |       |       |
|    |  |  | <input type="checkbox"/> Mixed Up Concepts |                                |       |       |
|    |  |  |                                            |                                |       |       |
|    |  |  | Learning from Mistakes                     |                                |       |       |
|    |  |  | Instructional Implications                 |                                |       |       |
|    |  |  |                                            |                                |       |       |
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|    |  |  |                                            |                                |       |       |
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|                                                              | Analysis of Assessed Standards |       |       |                                                                                                                                                                          |  |  |
|--------------------------------------------------------------|--------------------------------|-------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
|                                                              | Cluster                        |       |       |                                                                                                                                                                          |  |  |
|                                                              | Subcluster                     |       |       |                                                                                                                                                                          |  |  |
|                                                              | Content                        |       |       |                                                                                                                                                                          |  |  |
|                                                              | Process                        |       |       |                                                                                                                                                                          |  |  |
|                                                              | Item Type                      |       |       |                                                                                                                                                                          |  |  |
|                                                              | Stimulus                       |       |       |                                                                                                                                                                          |  |  |
|                                                              |                                |       |       |                                                                                                                                                                          |  |  |
|                                                              | <b>Data Analysis</b>           |       |       | <b>Error Analysis</b>                                                                                                                                                    |  |  |
|                                                              | Item                           | State | Local | <input type="checkbox"/> Guessing<br><input type="checkbox"/> Careless Error<br><input type="checkbox"/> Stopped Too Early<br><input type="checkbox"/> Mixed Up Concepts |  |  |
|                                                              |                                |       |       |                                                                                                                                                                          |  |  |
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| <b>Learning from Mistakes<br/>Instructional Implications</b> |                                |       |       |                                                                                                                                                                          |  |  |
|                                                              |                                |       |       |                                                                                                                                                                          |  |  |

\* Correct Answer ( )