Grade 6 Mathematics Practice Test
Scoring Guide (computer-based form)

Session	Sequence	Item Type	Key	Assessable Content
1	1	SA	8	6.NS.A.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc.) How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?* .
1	2	MS	B,E	6.EE.A.4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*
1	3	MC	B	6.RP.A.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*
1	4	MC	D	6.NS.B.2 Fluently divide multi-digit numbers using the standard algorithm.
1	5	MC	B	6.NS.C.7a Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example, interpret -3 > -7 as a statement that -3 is located to the right of -7 on a number line oriented from left to right* .
1	6	SA	5400	6.G.A.2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l\ w\ h$ and $V = b\ h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
1	7	TE	see TE* item image at end of scoring guide	6.NS.C.6b Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.
1	8	MC	B	6.NS.B.4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express 36 + 8 as 4 (9 + 2)* .
1	9	MS	D,E	6.SP.A.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages* .
1	10	MC	C	6.EE.B.8 Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x <$ c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

*Technology Enhanced

Grade 6 Mathematics Practice Test
Scoring Guide (computer-based form)

Session	Sequence	Item Type	Key	Assessable Content
1	11	MS	A,E	6.SP.A.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
1	12	MC	B	6.NS.C.7b Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write -3 ^{o}C > -7 ^{o}C to express the fact that -3 ^{o}C is warmer than -7 ^{o}C.*
1	13	MC	C	6.NS.B.2 Fluently divide multi-digit numbers using the standard algorithm.
1	14	SA	9	6.NS.C.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
1	15	TE	see TE* item image at end of scoring guide	6.RP.A.2 Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."*
1	16	MC	D	6.NS.C.6c Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
1	17	SA	6	6.NS.C.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.
1	18	MC	B	6.NS.C.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
1	19	MC	D	6.RP.A.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*
1	20	MC	A	6.RP.A.2 Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."*
2	21	MC	D	6.EE.B.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
2	22	MC	B	6.SP.B.5c Summarize numerical data sets in relation to their context, such as by: giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.

Grade 6 Mathematics Practice Test
Scoring Guide (computer-based form)

Session	Sequence	Item Type	Key	Assessable Content
2	23	MS	A,F	6.G.A.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
2	24	SA	29	6.EE.B.7 Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.
2	25	MS	B,D	6.EE.A.4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*
2	26	TE	see TE* item image at end of scoring guide	6.EE.A.1 Write and evaluate numerical expressions involving whole-number exponents.
2	27	CR	see rubric	Reasoned estimates: Use reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity requiring knowledge and skills articulated in Sub-claim A. 6.NS.B.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. 6.NS.B.4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express 36 + 8 as 4 (9 + 2).* 6.G.A.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
2	28	Part A: MC Part B: SA	Part A: C Part B: 7	6.EE.C.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.
2	29	Part A: MC Part B: MC	Part A: D Part B: D	6.RP.A.3a Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

Grade 6 Mathematics Practice Test
Scoring Guide (computer-based form)

Session	Sequence	Item Type	Key	Assessable Content
2	30	CR	see rubric	Base arithmetic explanations/reasoning on concrete referents such as diagrams (whether provided in the prompt or constructed by the student in her response), connecting the diagrams to a written (symbolic) method. 6.NS.A.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc.) How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?.*
2	31	CR	see rubric	Solve multi-step contextual word problems with degree of difficulty appropriate to Grade 6, requiring application of knowledge and skills articulated in Sub-claim A. 6.RP.A.3b Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?* 6.EE.A.2a Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as 5 - y.* 6.EE.A.2c Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6 s^2$ to find the volume and surface area of a cube with sides of length s = 1/2.* 6.EE.B.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
2	32	CR	see rubric	Base explanations/reasoning on a number line diagram (whether provided in the prompt or constructed by the student in her response). 6.NS.C.6a Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., -(-3) = 3, and that 0 is its own opposite. 6.NS.C.6c Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane. 6.NS.C.7c Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of -30 dollars, write |-30| = 30 to describe the size of the debt in dollars.* 6.NS.C.7d Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.*

Grade 6 Mathematics Practice Test
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Session	Sequence	Item Type	Key	Assessable Content
3	33	SA	1200	6.RP.A.3c Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.
3	34	SA	3.75	6.RP.A.3b Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*
3	35	SA	77	6.EE.A.2c Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6 s^2$ to find the volume and surface area of a cube with sides of length s = 1/2.*
3	36	TE	see TE* item image at end of scoring guide	6.EE.C.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.
3	37	CR	see rubric	Base explanations/reasoning on the properties of operations. 6.EE.A.3 Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y. 6.EE.A.4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*
3	38	Part A: MC Part B: SA	Part A: C Part B: 1.60*	6.EE.B.7 Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers. *Scorer should follow student work from part A to part B. Part B can receive credit if an incorrect response in part A is used correctly in part B.
3	39	SA	11	6.EE.A.2c Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6 s^2$ to find the volume and surface area of a cube with sides of length s = 1/2.*
3	40	Part A: SA Part B: SA	Part A: 43 Part B: 57	6.SP.B.5c Summarize numerical data sets in relation to their context, such as by: giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.

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Scoring Guide (computer-based form)

Session	Sequence	Item Type	Key	Assessable Content
3	41	CR	See rubric	Distinguish correct explanation/reasoning from that which is flawed, and – if there is a flaw in the argument – present corrected reasoning. (For example, some flawed 'student' reasoning is presented and the task is to correct and improve it.) 5.NBT.A.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. 5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
3	42	MC	B	6.EE.B.5 Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
3	43	CR	See rubric	Solve multi-step contextual problems with degree of difficulty appropriate to Grade 6, requiring application of knowledge and skills articulated in 5.NBT.B, 5.NF, 5.MD, and 5.G.A. 5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. 5.MD.B.2 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally. 5.NF.A.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$. 5.NF.B.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

<table>
<tr><th colspan="2">#27</th></tr>
<tr><th>Score</th><th>Description</th></tr>
<tr><td>3</td><td>Student response includes the following 3 elements.
Modeling component = 2 points
The student models a strategy for developing a reasoned estimate for an appropriate length and width of each cereal bar, including explaining assumptions.
The student models a strategy for determining the amount each cereal bar will cost Megan to make.
Computation component = 1 point
The student provides the amount each cereal bar will cost.
Sample Student Response:

I assume that each bar could be 2 inches by 4 inches. This is a reasonable size for a cereal bar and is easy enough to hold and does not appear to be too large a serving size. The cereal bar can also be cut so that all cereal bars are the same size and shape since 24 inches and 16 inches can be evenly divided by 2 inches and 4 inches.

For the 1 pan of bars cut so each bar is 2 inches by 4 inches, there would be 6 rows of bars (24 ÷ 4) and 8 bars in each row (16 ÷ 2). Altogether, that would make 48 bars for each pan. The amount spent on ingredients is $9.85, so the amount each cereal bar will cost Megan to make is $9.85 ÷ 48, which is $0.205… or about $0.21.

Notes:
Other reasoned estimates are possible. As long as the modeling steps are valid, credit should be awarded.
The student may receive a combined total of 2 points if the modeling processes are correct but the student makes one or more computational errors resulting in incorrect answers.
The student may receive a total of 1 point if he/she computes the correct answer but shows no work or insufficient work to indicate a correct modeling process.</td></tr>
<tr><td>2</td><td>Student response includes 2 of the 3 elements.</td></tr>
<tr><td>1</td><td>Student response includes 1 of the 3 elements.</td></tr>
<tr><td>0</td><td>Student response is incorrect or irrelevant.</td></tr>
</table>

<table>
<tr><th colspan="2">#30</th></tr>
<tr><th>Score</th><th>Description</th></tr>
<tr><td>4</td><td>Student response includes each of the following 4 elements.

• Reasoning component = 3 points
o Correct explanation of how to find the number of sheets in a stack using the ruler
o Correct expression or equation that can be used to find the number of sheets, $2\frac{1}{4} \div \frac{3}{16}$ or equivalent
o Correct explanation of how expression relates to use of the ruler

• Computation component = 1 point
o Correct number of sheets of cardboard in a stack, 12

Sample Student Response:

To find the number of sheets in a stack using the ruler, you start at $2\frac{1}{4}$ inches on the ruler. Then you can mark off groups of $\frac{3}{16}$. This is 3 of the 16ths marks on the ruler. Then you can count the number of groups. There were 12 groups, so there are 12 sheets in a stack.

An expression that represents this is $2\frac{1}{4} \div \frac{3}{16}$. This relates to using the ruler because you are starting with $2\frac{1}{4}$ and dividing by $\frac{3}{16}$, which is really finding how many groups of $\frac{3}{16}$ there are in $2\frac{1}{4}$. When you divide, you will get 12, which means there are 12 groups of $\frac{3}{16}$ in $2\frac{1}{4}$.</td></tr>
<tr><td>3</td><td>Student response includes 3 of the 4 elements.</td></tr>
<tr><td>2</td><td>Student response includes 2 of the 3 elements.</td></tr>
<tr><td>1</td><td>Student response includes 1 of the 2 elements.</td></tr>
<tr><td>0</td><td>Student response is incorrect or irrelevant.</td></tr>
</table>

#31 Part A	
Score	**Description**
1	Student response includes the following element. • **Modeling component** = 1 point o Correct expression that represents the total amount of money raised Sample Student Response: 15x Note: Any valid equivalent expression can receive credit.
0	Student response is incorrect or irrelevant.

Part B	
Score	**Description**
2	Student response includes the following elements. • **Modeling component** = 1 point o The student shows a correct strategy to determine the amount of money by which the club exceeded its goal. • **Computation component** = 1 point o The student provides the amount of money by which the club exceeded its goal. Sample Student Response: "15 × 43 = 645, and 645 – 500 = 145" OR "Using my expression, I multiplied 43 by $15 to get a total of $645 raised. I then subtracted $500 from $645 to get $145 for the amount that the club exceeded its goal." Notes: • The student may receive 1 point for Part B if the modeling process is correct but the student makes one or more computational errors resulting in incorrect answers. • The student may receive 1 point for Part B if he or she computes the correct answers but shows no work or insufficient work to indicate a correct modeling process. If a student writes an incorrect model and answers the remaining prompts based on the model, he or she can receive 1 point for computation but no points for modeling.
1	Student response includes 1 of the 2 elements.
0	Student response is incorrect or irrelevant.

<table>
<tr><th colspan="2">#32 Part A</th></tr>
<tr><th>Score</th><th>Description</th></tr>
<tr><td>2</td><td>Student response includes each of the following 2 elements.

• Reasoning component = 1 point

o Correct work shown or explanation given using the number line

• Computation component = 1 point

o Correct distance of each point from Q (0.3 for R and 0.6 for P)

Sample Student Response:
Point R is 0.3 unit from point Q, because there are 3 spaces of 0.1 between them on the number line.
Point P is 0.6 unit from point Q, because there are 6 spaces of 0.1 between them on the number line.</td></tr>
<tr><td>1</td><td>Student response includes 1 of the 2 elements.</td></tr>
<tr><td>0</td><td>Student response is incorrect or irrelevant.</td></tr>
<tr><th colspan="2">Part B</th></tr>
<tr><th>Score</th><th>Description</th></tr>
<tr><td>1</td><td>Student response includes the following element.

• Reasoning component = 1 point

o Correct explanation of how to find point S on the number line

Sample Student Response:
Since point Q is at 0 and since point S is the same distance from point Q as point R but in a different location, it must be on the opposite side of point Q. Points R and S are on opposite sides of 0 on the number line, so their locations should have opposite signs. Since point R is located at 0.3, point S must be located at -0.3.

Note: Point S can also be located at 0.3 for credit with a valid explanation.</td></tr>
<tr><td>0</td><td>Student response is incorrect or irrelevant.</td></tr>
</table>

#37	
Score	**Description**
3	Student response includes the following 3 elements: • Explanation of why Brianna's thinking is incorrect • Explanation of how to determine which expressions are equivalent • Identifies expressions A and C as equivalent Sample Student Response: Brianna only checked the value of each expression for one substitution of *x*. To check which expressions are equivalent, I need to check that they are the same value for any substitution of *x*. Since expressions A and C are both equivalent to the expression $6x - 4$, they will be equivalent for any substitution of *x*, so they are equivalent.
2	Student response includes 2 of the 3 elements.
1	Student response includes 1 of the 3 elements.
0	Student response is incorrect or irrelevant.

#41	
Score	**Description**
4	Student response includes the following 4 elements. • **Reasoning component** = 2 points o The student correctly explains why Pattern A is incorrect. o The student correctly explains why Pattern B is incorrect. • **Computation component** = 2 points o The student provides the correct values for Pattern A. o The student provides the correct values for Pattern B. Sample Student Response: The student added zeros to the right of the number, instead of moving the number up one place value. The student added zeros to the left of the decimal portion of the number, instead of moving the number down one place value. For pattern A $3.675 \cdot 10 = 36.75$ $3.675 \cdot 100 = 367.5$ $3.675 \cdot 1{,}000 = 3{,}675$ For pattern B $3.675 \cdot 0.1 = 0.3675$ $3.675 \cdot 0.01 = 0.03675$ $3.675 \cdot 0.001 = 0.003675$ Note: Other valid reasoning exists. As long as the student explains the flaw in the provided work, credit should be awarded.
3	Student response includes 3 of the 4 elements.
2	Student response includes 2 of the 4 elements.
1	Student response includes 1 of the 4 elements.
0	Student response is incorrect or irrelevant.

#43 Part A	
Score	**Description**
3	Student response includes the following 3 elements. • **Computation component** = 1 point o Correct total number of cups of water • **Modeling component =** 2 points o Correct expression using addition and multiplication o Correct process for evaluating the expression written Sample Student Response: 3 (cups) $6\times\frac{1}{8}+2\times\frac{1}{4}+3\times\frac{3}{8}+1\times\frac{5}{8}$ $6\times\frac{1}{8}+2\times\frac{1}{4}+3\times\frac{3}{8}+1\times\frac{5}{8}=$ $\frac{6}{8}+\frac{2}{4}+\frac{9}{8}+\frac{5}{8}=$ $\frac{6}{8}+\frac{4}{8}+\frac{9}{8}+\frac{5}{8}=\frac{24}{8}=3$ Notes: o The student must show operations of addition AND multiplication in order to receive the modeling point. If students only use addition, they do not get the modeling point. o The student must show only one expression to receive this modeling point. o If the student writes an incorrect expression but shows a correct process for evaluating that expression, the student will receive 1 modeling point.
2	Student response includes 2 of the 3 elements.
1	Student response includes 1 of the 3 elements.
0	Student response is incorrect or irrelevant.

<table>
<tr><th colspan="2">#43 Part B</th></tr>
<tr><th>Score</th><th>Description</th></tr>
<tr><td>3</td><td>Student response includes the following 3 elements.
Computation component = 1 point
Correct total number of fluid ounces in the beaker before the water was poured by the 12 students, 56 fluid ounces
Modeling component = 2 points
Correct process for finding the amount of water in the beaker
Correct process for converting gallons and cups to fluid ounces
Sample Student Response:

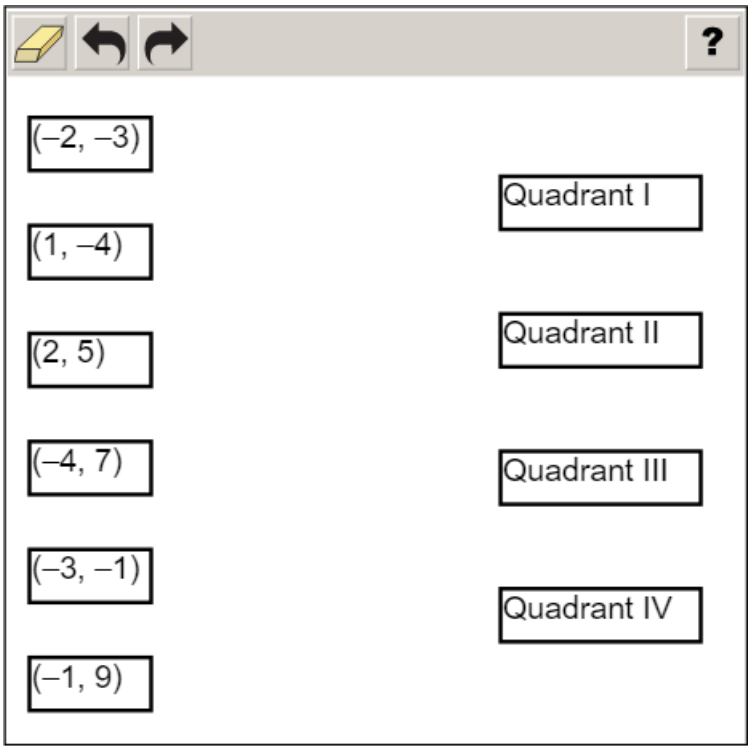
The amount of water in the beaker can be found by adding 3 cups to a ¼ gallon.
To convert ¼ gallon to fluid ounces, I need to multiply by 128, which is 32 fluid ounces. To convert 3 cups to fluid ounces, I need to multiply by 8, which is 24 fluid ounces. The amount of water in the beaker before the water was poured out is 32 + 24 = 56 fluid ounces.

Notes:
Units are not required to receive credit.
The student may receive a combined total of 4 points if the modeling processes are correct but the student makes one or more computational errors resulting in incorrect answers.
The student may receive a total of 2 points if he or she computes the correct answers but shows no work or insufficient work to indicate a correct modeling process.
The student cannot receive more than 2 points for modeling if the explanations, while sufficient to indicate that the student had a correct process, contain nonsense statements, such as ¼ × 128 = 32 + 24 = 56.</td></tr>
<tr><td>2</td><td>Student response includes 2 of the 3 elements.</td></tr>
<tr><td>1</td><td>Student response includes 1 of the 3 elements.</td></tr>
<tr><td>0</td><td>Student response is incorrect or irrelevant.</td></tr>
</table>

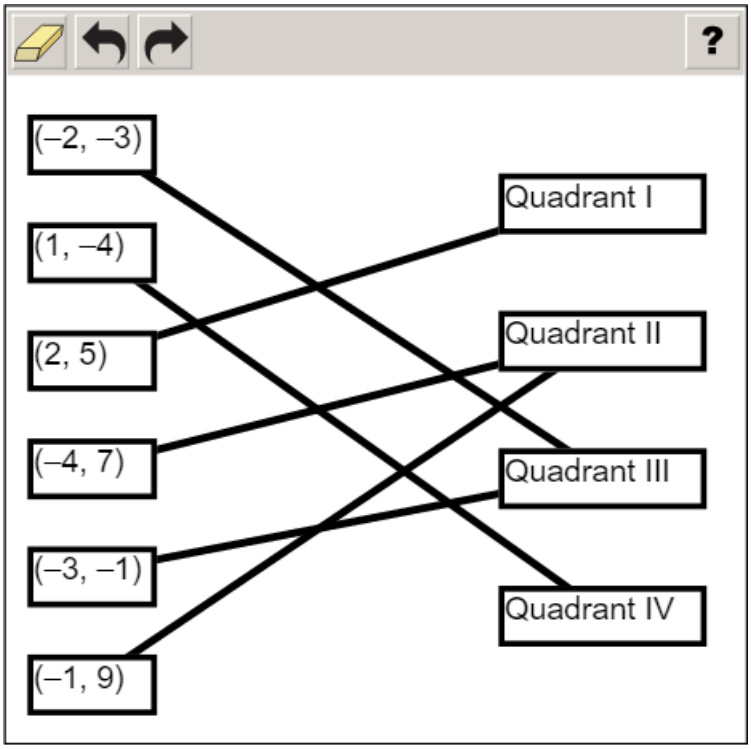
Technology Enhanced Item Images/Keys

#7

Before Response



Correct Response



Technology Enhanced Item Images/Keys

#15

Before Response

Mr. Zenon makes baby food for his daughter. The baby food is a mixture of apples and pears. The ratio of cups of apples to cups of pears in the baby food is 5:2. Choose a correct value from each drop-down to correctly complete each statement.

For every cup of pears in the baby food, Mr. Zenon includes [▾] cups of apples.

For every cup of apples in the baby food, Mr. Zenon includes [▾] cups of pears.

Correct Response

Mr. Zenon makes baby food for his daughter. The baby food is a mixture of apples and pears. The ratio of cups of apples to cups of pears in the baby food is 5:2. Choose a correct value from each drop-down to correctly complete each statement.

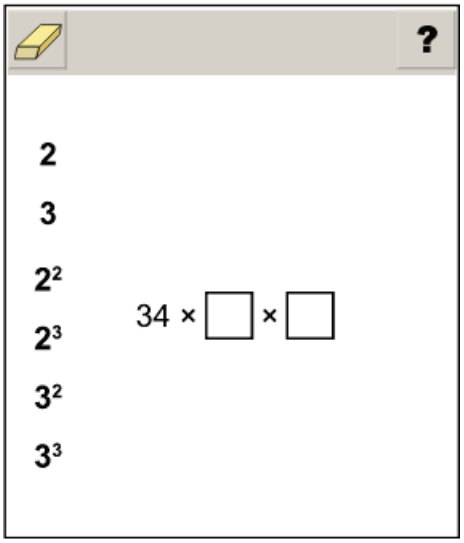
For every cup of pears in the baby food, Mr. Zenon includes [5/2 ▾] cups of apples.

For every cup of apples in the baby food, Mr. Zenon includes [2/5 ▾] cups of pears.

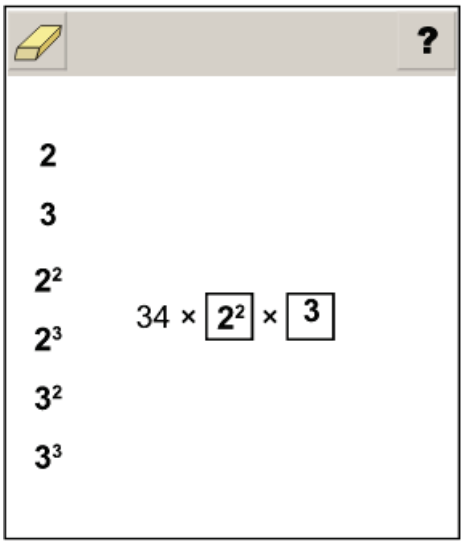
Technology Enhanced Item Images/Keys

#26

Before Response



Correct Response



1st box: 2^2, 2nd box: 3 OR 1st box: 3, 2nd box 2^2

Technology Enhanced Item Images/Keys

#36

Before Response

In a certain storage unit, there are:

- 6 packages in a box,
- 10 boxes in a stack, and
- 4 stacks in a row.

Let p represent the number of packages, b represent the number of boxes, s represent the number of stacks, and r represent the number of rows for this storage unit.

Select values from each drop-down menu so that each equation demonstrates the relationship between two variables.

$s = 4$ [▾]

[▾] $r = p$

Correct Response

In a certain storage unit, there are:

- 6 packages in a box,
- 10 boxes in a stack, and
- 4 stacks in a row.

Let p represent the number of packages, b represent the number of boxes, s represent the number of stacks, and r represent the number of rows for this storage unit.

Select values from each drop-down menu so that each equation demonstrates the relationship between two variables.

$s = 4$ [r ▾]

[240 ▾] $r = p$

LEAP

Assessment Reference Sheet

Grade 6

1 inch = 2.54 centimeters
1 meter = 39.37 inches
1 mile = 5280 feet
1 mile = 1760 yards
1 mile = 1.609 kilometers

1 kilometer = 0.62 mile
1 pound = 16 ounces
1 pound = 0.454 kilogram
1 kilogram = 2.2 pounds
1 ton = 2000 pounds

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts
1 gallon = 3.785 liters
1 liter = 0.264 gallon
1 liter = 1000 cubic centimeters

Triangle	$A = \frac{1}{2}bh$
Right Rectangular Prism	$V = Bh$ or $V = lwh$