Step Up to the TEKS
by GF Educators, Inc.

Sixth Grade Mathematics

2017 Released Items Analysis

Teacher: _____

Edition I

GF Educators Inc.
STEP IT UP

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Name: _____

Teacher: _____

Date: _____

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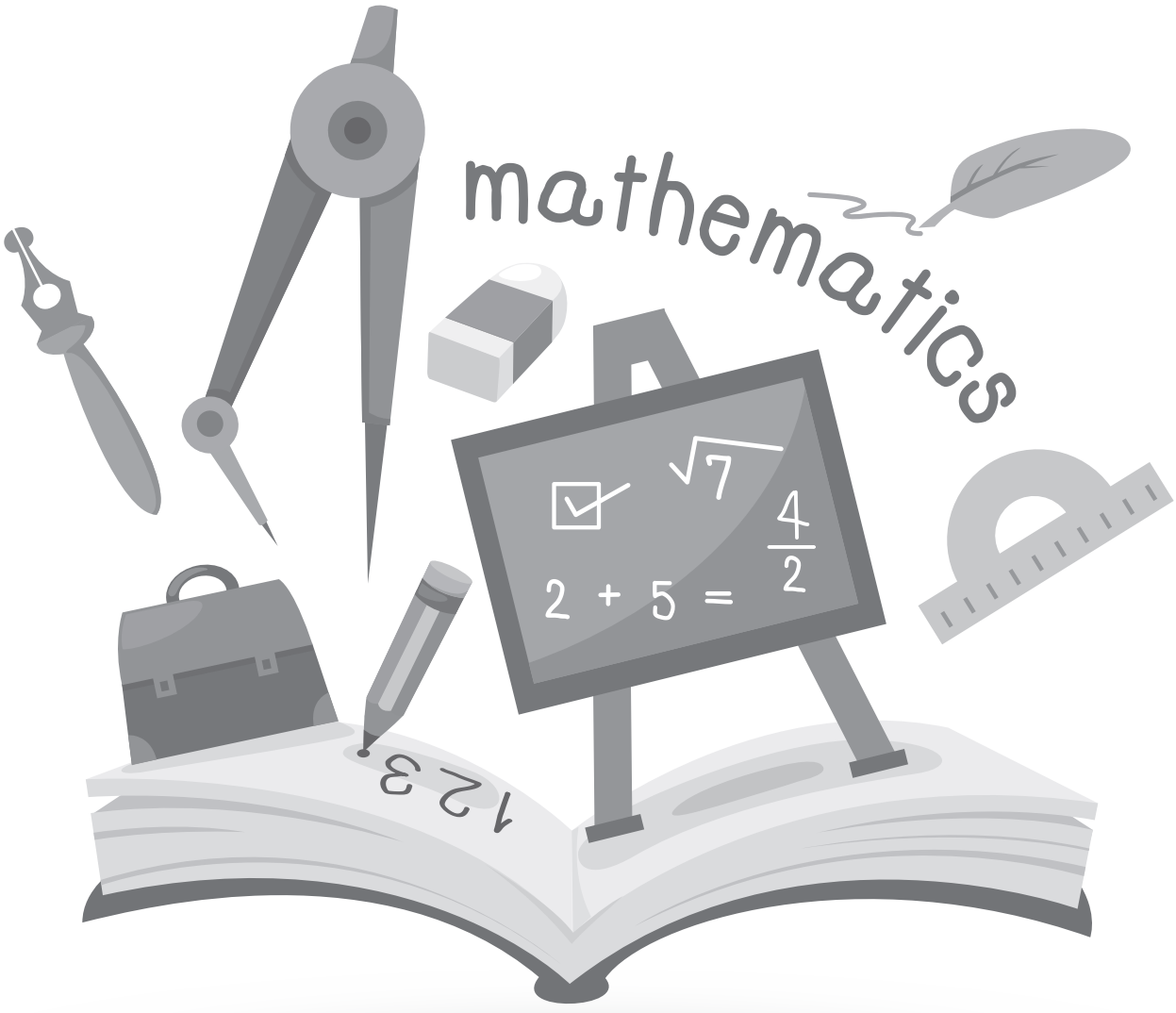
Instructional Analysis
2017 Released Items

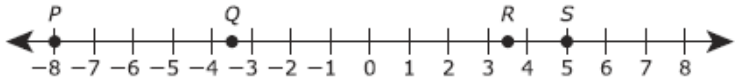


TEKS 6.2C Supporting Standard
locate, compare, and order integers and rational numbers using a number line

ITEM

18 Dana placed the following points on a number line.

- Point P at $-\frac{24}{3}$
- Point Q at $-\frac{9}{2}$
- Point R at $\frac{7}{2}$
- Point S at $\frac{15}{3}$



Which point is NOT correctly placed on this number line?

F Point *P*
G Point *Q*
H Point *R*
J Point *S*

Item Analysis	
Verb	Locate
Using or Including	Number Line
Concept	Rational Numbers
Process TEKS	**6.1A, 6.1B, 6.1E, 6.1F**

Notes

TEKS 6.2D Readiness Standard
order a set of rational numbers arising from mathematical and real-world contexts

ITEM

1 Which list shows the temperatures in order from coldest to warmest in degrees Fahrenheit?

A −10°F 8°F −5°F 0°F
B −5°F −10°F 0°F 8°F
C −10°F −5°F 0°F 8°F
D 0°F −5°F 8°F −10°F

Item Analysis	
Verb	Order
Using or Including	Real-World
Concept	Rational Numbers
Process TEKS	**6.1A, 6.1B, 6.1F**

Notes

TEKS 6.2D Readiness Standard
order a set of rational numbers arising from mathematical and real-world contexts

ITEM

20 Elida will use six different wires for a science project. The fractions represent the diameters of these wires in inches.

$$\frac{7}{16}, \frac{1}{2}, \frac{3}{8}, \frac{9}{32}, \frac{5}{16}, \frac{15}{32}$$

Which list shows the diameters of the wires in order from least to greatest?

F $\frac{1}{2}, \frac{3}{8}, \frac{7}{16}, \frac{5}{16}, \frac{15}{32}, \frac{9}{32}$
G $\frac{9}{32}, \frac{15}{32}, \frac{5}{16}, \frac{7}{16}, \frac{3}{8}, \frac{1}{2}$
H $\frac{1}{2}, \frac{3}{8}, \frac{5}{16}, \frac{7}{16}, \frac{9}{32}, \frac{15}{32}$
J $\frac{9}{32}, \frac{5}{16}, \frac{3}{8}, \frac{7}{16}, \frac{15}{32}, \frac{1}{2}$

Item Analysis	
Verb	Order
Using or Including	Real-World
Concept	Rational Numbers
Process TEKS	**6.1A, 6.1B, 6.1F**

Notes

TEKS 6.2E Supporting Standard
extend representations for division to include fraction notation such as a/b represents the same number as a ÷ b where b ≠ 0

ITEM

34 Amy has 5 yd of border to put around a garden. She uses all the border to make four sections that are the same length. Which expression does NOT equal the length of one of these sections in yards?

F 4 ÷ 5
G $4\overline{)5}$
H $\frac{5}{4}$
J 5 ÷ 4

Item Analysis	
Verb	Extend
Using or Including	Fraction Notation
Concept	Division
Process TEKS	**6.1A, 6.1B, 6.1F**

Notes

TEKS 6.4C Supporting Standard
give examples of ratios as multiplicative comparisons of two quantities describing the same attribute

ITEM

3 A housepainter mixed 5 gal of blue paint with every 9 gal of yellow paint in order to make a green paint. Which ratio of gallons of blue paint to gallons of yellow paint will make the same shade of green paint?

A 30: 54
B 6: 10
C 10: 45
D 27: 15

Item Analysis	
Verb	Give Examples
Using or Including	NA
Concept	Ratios
Process TEKS	**6.1A, 6.1B, 6.1F**

Notes

TEKS 6.4G Readiness Standard
generate equivalent forms of fractions, decimals, and percents using real-world problems, including problems that involve money

ITEM

36 A company spent 32% of its annual budget developing a new machine. What fraction of the company's budget was spent developing the new machine?

F $\frac{1}{32}$
G $\frac{5}{16}$
H $\frac{8}{25}$
J $\frac{4}{125}$

Item Analysis	
Verb	Generate
Using or Including	NA
Concept	Equivalent Forms Percents and Fractions
Process TEKS	**6.1A, 6.1B, 6.1F**

Notes

TEKS 6.7A Readiness Standard
generate equivalent numerical expressions using order of operations, including whole number exponents, and prime factorization

ITEM

9 Leon wrote an expression that is equivalent to (30 +6) ÷12. Which expression could be the one Leon wrote?

A 36 ÷ 3 • 4
B (3 • 3 • 4) ÷ 4 • 3
C 5 • 6 + 2 • 3 ÷ 3 • 2 • 2
D (3 • 3 • 2 • 2) ÷ (3 • 2 • 2)

Item Analysis

Verb	Generate
Using or Including	Order of Operations Whole Numbers
Concept	Equivalent Numerical Expressions
Process TEKS	**6.1A, 6.1B, 6.1F**

Notes

TEKS 6.7A Readiness Standard
generate equivalent numerical expressions using order of operations, including whole number exponents, and prime factorization

ITEM

21 Mr. Gonzales showed students part of the prime factorization of 90. One factor is missing.

$2 \cdot 3^2 \cdot \_\_$

What number completes this prime factorization?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

Item Analysis

Verb	Generate
Using or Including	Prime Factorization
Concept	Equivalent Numerical Expressions
Process TEKS	**6.1A, 6.1B, 6.1E, 6.1F**

Notes

TEKS 6.7D Readiness Standard
generate equivalent expressions using the properties of operations: inverse, identity, commutative, associative, and distributive properties

ITEM

16 Which expression is equivalent to $y \cdot 48$?

F $(y \cdot 40) + 8$
G $(y \cdot 4) \cdot 8$
H $(y \cdot 40) + (y \cdot 8)$
J $(y \cdot 4) + 8$

Item Analysis	
Verb	Generate
Using or Including	Properties
Concept	Equivalent Expressions
Process TEKS	**6.1B, 6.1F**

Notes

TEKS 6.7D Readiness Standard
generate equivalent expressions using the properties of operations: inverse, identity, commutative, associative, and distributive properties

ITEM

30 Which expression is equivalent to $30 \div (3 + x)$?

F $(3 + x) \div 30$
G $30 \div (x + 3)$
H $(3 \div 30) + x$
J $30 \div 3 + 30 \div x$

Item Analysis	
Verb	Generate
Using or Including	Properties
Concept	Equivalent Expressions
Process TEKS	**6.1B, 6.1F**

Notes

TEKS 6.3B Supporting Standard
determine, with and without computation, whether a quantity is increased or decreased when multiplied by a fraction, including values greater than or less than one

ITEM

19 Which statement about 3 multiplied by $\frac{2}{3}$ must be true?

A The product is between 3 and 4.
B The product is less than $\frac{2}{3}$.
C The product is between $\frac{2}{3}$ and 3.
D The product is greater than 4.

Item Analysis

Verb	Determine
Using or Including	Decreased
Concept	Multiplied by a Fraction
Process TEKS	**6.1A, 6.1B, 6.1F**

Notes

TEKS 6.3D Readiness Standard
add, subtract, multiply, and divide integers fluently

ITEM

25 Which expression has a value of 22?

A 8 – (-3) + 33 ÷ (-3)
B -3 + (-2) – (-8) – 1
C -6 • 2 – (-15)
D -5 • 2 – 12

Item Analysis

Verb	Add, Subtract, Multiply, Divide
Using or Including	Fluently
Concept	Integers
Process TEKS	**6.1B, 6.1F**

Notes

TEKS 6.3E Readiness Standard
multiply and divide positive rational numbers fluently

ITEM

6 A team of workers took 167.3 hours to complete a task. A smaller team of workers will complete the same task, but it will take them 1.25 times as long as it took the first team.

Based on this information, which statement is true?

F The task will take the smaller team of workers 168.55 hours to complete, because 167.3 + 1.25 = 168.55.

G The task will take the smaller team of workers 179.8 hours to complete, because 167.3 + 1.25 = 179.8.

H The task will take the smaller team of workers 198.825 hours to complete, because 167.3 × 1.25 = 198.825.

J The task will take the smaller team of workers 209.125 hours to complete, because 167.3 × 1.25 = 209.125.

Item Analysis	
Verb	Multiply
Using or Including	Fluently
Concept	Positive Rational Numbers
Process TEKS	**6.1A, 6.1B, 6.1G**

Notes

TEKS 6.4B Readiness Standard
apply qualitative and quantitative reasoning to solve prediction and comparison of real-world problems involving ratios and rates

ITEM

17 Megan and Desmond each added the same amount of water to their aquariums. Megan mixed 5 mL of a chemical solution with every gallon of water for her aquarium. Desmond mixed 8 mL of the chemical solution with every 2 gallons of water for his aquarium.

Which of these statements is true?

A Megan used more solution per gallon of water than Desmond, because 5 : 1 is greater than 8 : 2.

B Megan used more solution per gallon of water than Desmond, because 5 mL is greater than 2 mL.

C Desmond used more solution per gallon of water than Megan, because 8 mL is greater than 5 mL.

D Desmond used more solution per gallon of water than Megan, because 8 : 2 is greater than 5 : 1.

Item Analysis	
Verb	Apply
Using or Including	Ratio
Concept	Solve Real-World Problems
Process TEKS	**6.1A, 6.1B, 6.1G**

Notes

TEKS 6.4B Readiness Standard
apply qualitative and quantitative reasoning to solve prediction and comparison of real-world problems involving ratios and rates

ITEM

29 In Austin, Texas, 8 bats ate 40 grams of insects in one night. At this rate, how many grams of insects could 64 bats eat in one night?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

Item Analysis	
Verb	Apply
Using or Including	Ratio
Concept	Solve Real-World Problems
Process TEKS	**6.1A, 6.1B, 6.1F**

Notes

TEKS 6.5A Supporting Standard
represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions

ITEM

24 The list shows the number of viewers of an online music video each day for 5 consecutive days.

5 35 245 1,715 12,005

By what factor did the number of viewers change each day from the first day to the fifth day?

F 7
G 12,000
H 2,401
J 30

Item Analysis	
Verb	Represent
Using or Including	Scale Factor
Concept	Ratios
Process TEKS	**6.1A, 6.1B, 6.1F**

Notes

TEKS 6.5B Readiness Standard
solve real-world problems to find the whole given a part and the percent, to find the part given the whole and the percent, and to find the percent given the part and the whole, including the use of concrete and pictorial models

ITEM

11 Customers at an ice-cream shop took a survey. The results showed that 144 customers rated the shop as being "very satisfactory." This number represented 45% of the total number of customers who took the survey.

What was the total number of customers who took the survey?

A 189
B 65
C 99
D 320

Item Analysis	
Verb	Solve
Using or Including	NA
Concept	Find the Whole
Process TEKS	**6.1A, 6.1B, 6.1F**

Notes

TEKS 6.5B Readiness Standard
solve real-world problems to find the whole given a part and the percent, to find the part given the whole and the percent, and to find the percent given the part and the whole, including the use of concrete and pictorial models

ITEM

32 There are 90 girls and 60 boys in the sixth grade at a middle school. Of these students, 9 girls and 3 boys write left-handed. What percentage of the sixth graders at this middle school write left-handed?

F 10%
G 8%
H 5%
J 15%

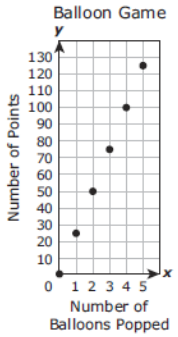
Item Analysis	
Verb	Solve
Using or Including	NA
Concept	Find the Percent
Process TEKS	**6.1A, 6.1B, 6.1F**

Notes

TEKS 6.6C Readiness Standard
represent a given situation using verbal descriptions, tables, graphs, and equations in the form y = kx or y = x + b

ITEM

13 The graph shows the number of points, *y*, a player earns in a balloon game based on the number of balloons the player pops, *x*.



Which equation best represents the relationship between *x* and *y*?

A $y = x + 25$
B $x = y + 25$
C $x = 25y$
D $y = 25x$

Item Analysis	
Verb	Represent
Using or Including	Table $y = ax$
Concept	Given Situation
Process TEKS	**6.1A, 6.1B, 6.1D, 6.1F**

Notes

TEKS 6.6C Readiness Standard
represent a given situation using verbal descriptions, tables, graphs, and equations in the form y = kx or y = x + b

ITEM

27 Mr. Martínez asked his students to write a situation that could describe the relationship between all the values of *x* and *y* in the table.

x	0	1	2	3
y	6	7	8	9

Which situation best describes the relationship between all the values of *x* and *y* in the table?

A Rachel had six dollars and then started to save one dollar each week.
B Beatriz ran one mile the first week and one mile each week after that.
C James read zero books in six months and then started to read one book each week.
D Marion has six times the number of toy trains that Tony has.

Item Analysis	
Verb	Represent
Using or Including	Table Verbal Description
Concept	Given Situation
Process TEKS	**6.1A, 6.1B, 6.1D, 6.1G**

Notes

TEKS 6.9A Supporting Standard
write one-variable, one-step equations and inequalities to represent constraints or conditions within problems

ITEM

8 Liang has a goal of walking at least 18 miles. She walks at a rate of 4 miles per hour. Which inequality can Liang use to find h, the number of hours she should walk in order to meet or exceed her goal?

F $4h \geq 18$
G $4h \leq 18$
H $h + 4 \geq 18$
J $h + 4 \leq 18$

Item Analysis	
Verb	Write
Using or Including	NA
Concept	One-Variable, One-Step Inequality
Process TEKS	**6.1A, 6.1B, 6.1F**

Notes

TEKS 6.9C Supporting Standard
write corresponding real-world problems given one-variable, one-step equations or inequalities

ITEM

15 Jamal wrote the inequality $\frac{x}{16} \leq 6$. Which situation is best represented by this inequality?

A Jamal divided x pieces of paper among 16 students, and each student received fewer than 6 pieces of paper.
B Jamal placed x cards in 16 stacks, and there were no more than 6 cards in each stack.
C Jamal separated x shirts into 6 stacks, and each stack had at least 16 shirts.
D Jamal shared 16 markers with x classmates, and each classmate had fewer than 6 markers.

Item Analysis	
Verb	Write
Using or Including	NA
Concept	One-Variable, One-Step Inequality
Process TEKS	**6.1A, 6.1B, 6.1G**

Notes

TEKS 6.10A Readiness Standard
model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts

ITEM

5 What value of x makes this equation true?

$$-90 = -100 + x$$

A 10
B 10
C 190
D 190

Item Analysis	
Verb	Solve
Using or Including	NA
Concept	One-Variable, One-Step Equation
Process TEKS	**6.1B, 6.1F**

Notes

TEKS 6.10A Readiness Standard
model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts

ITEM

31 Saritha will construct a rectangle that has a height of 4 units and an area of up to 48 square units. Which inequality represents all the possible lengths in units of the bases, *b*, that Saritha can use to construct this rectangle?

A $b \leq 44$
B $b \geq 52$
C $b \leq 12$
D $b \geq 192$

Item Analysis	
Verb	Solve
Using or Including	Geometric Concepts
Concept	One-Variable, One-Step Inequality
Process TEKS	**6.1A, 6.1B, 6.1D, 6.1F**

Notes

TEKS 6.10B Supporting Standard
determine if the given value(s) make(s) one-variable, one-step equations or inequalities true

ITEM

35 Which model shows two equal expressions when the value of x is 4?

A $\boxed{x}\ \boxed{x}\ \boxed{x}\ \boxed{x} = \boxed{1}\ \boxed{1}\ \boxed{1}\ \boxed{1}$

B $\boxed{x}\ \boxed{x}\ \boxed{x}\ \boxed{x} = \boxed{1}$

C $\boxed{x}\ \boxed{1}\ \boxed{1} = \boxed{1}\ \boxed{1}\ \boxed{1}\ \boxed{1}\ \boxed{1}$

D $\boxed{x}\ \boxed{x} = \boxed{1}\ \boxed{1}\ \boxed{1}\ \boxed{1}\ \boxed{1}\ \boxed{1}\ \boxed{1}\ \boxed{1}$

Item Analysis	
Verb	Determine
Using or Including	NA
Concept	Value True
Process TEKS	**6.1B, 6.1E, 6.1F**

Notes

Item Analysis	
Verb	
Using or Including	
Concept	
Process TEKS	

Notes

TEKS 6.4H Readiness Standard
convert units within a measurement system, including the use of proportions and unit rates

ITEM

38 A warehouse floor has a perimeter of 6,615 feet. What is the perimeter of the floor in yards?

F 2,205 yd
G 19,845 yd
H 78,380 yd
J 735 yd

Item Analysis	
Verb	Convert
Using or Including	Unit Rate
Concept	Measurement Systems
Process TEKS	**6.1A, 6.1B, 6.1C, 6.1F**

Notes

TEKS 6.8A Supporting Standard
extend previous knowledge of triangles and their properties to include the sum of angles of a triangle, the relationship between the lengths of sides and measures of angles in a triangle, and determining when three lengths form a triangle

ITEM

10 In triangle XYZ the measure of angle YXZ is 50°, and the measure of angle XYZ is 75°. What is the measure of angle XZY in degrees?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

Item Analysis	
Verb	Extend
Using or Including	Sum of the Angles of a Triangle
Concept	Properties of Triangles
Process TEKS	**6.1B, 6.1C, 6.1F**

Notes

TEKS 6.8C Supporting Standard
write equations that represent problems related to the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers

ITEM

22 A rectangular computer screen has an area of A square inches. The width of the computer screen is 7 inches. Which equation represents x, the length of the computer screen in inches?

F $x = \frac{7}{A}$
G $x = A + 27$
H $x = A - 2(7)$
J $x = \frac{A}{7}$

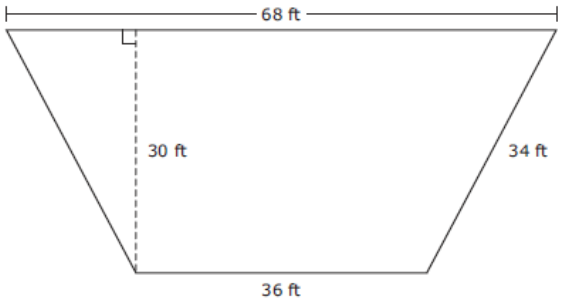
Item Analysis	
Verb	Write
Using or Including	NA
Concept	Area of a Rectangle
Process TEKS	**6.1A, 6.1B, 6.1C, 6.1F**

Notes

TEKS 6.8D Readiness Standard
determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers

ITEM

7 The playground at a park is shaped like a trapezoid. The dimensions of the playground are shown in the diagram.



What is the area of the playground in square feet?

A 3,120 ft^2
B 1,560 ft^2
C 1,768 ft^2
D 3,536 ft^2

Item Analysis	
Verb	Determine
Using or Including	NA
Concept	Area of a Trapezoid
Process TEKS	**6.1A, 6.1B, 6.1C, 6.1F**

Notes

TEKS 6.8D Readiness Standard
determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers

ITEM

26 The rectangle shown represents the base of a rectangular prism. Use the ruler provided to measure the length and width of the rectangle to the nearest $\frac{1}{4}$ inch.

The height of the prism is 2 inches. Which measurement is closest to the volume of the prism in cubic inches?

F 27 in.^{3}
G 22 in.^{3}
H 11 in.^{3}
J 12 in.^{3}

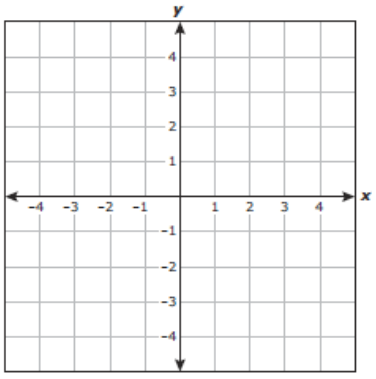
Item Analysis	
Verb	Determine
Using or Including	NA
Concept	Volume of a Rectangular Prism
Process TEKS	**6.1B, 6.1C, 6.1F**

Notes

TEKS 6.11A Readiness Standard
graph points in all four quadrants using ordered pairs of rational numbers

ITEM

2 A coordinate grid is shown below.



Which ordered pair describes a point that is located 4 units to the left of the origin and 2 units below the *x*-axis?

F (4, 2)
G (4, 2)
H (4,2)
J (4, 2)

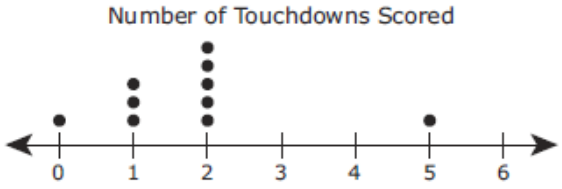
Item Analysis	
Verb	Graph
Using or Including	Ordered Pairs
Concept	Four Quadrants
Process TEKS	**6.1B, 6.1E, 6.1F**

Notes

TEKS 6.12B Supporting Standard
use the graphical representation of numeric data to describe the center, spread, and shape of the data distribution

ITEM

37 The dot plot shows the number of touchdowns a football team scored in 10 games last season.



Which statement best describes the data shown in the dot plot?

A The peak of the data is at 5.
B The data are clustered from 0 to 2.
C The data distribution has no gaps.
D The data distribution is symmetrical.

Item Analysis	
Verb	Use
Using or Including	Graphical Representation
Concept	Center, Spread, and Shape
Process TEKS	**6.1A, 6.1B, 6.1E, 6.1F**

Notes

TEKS 6.12C Readiness Standard
summarize numeric data with numerical summaries, including the mean and median (measures of center) and the range and interquartile range (IQR) (measures of spread), and use these summaries to describe the center, spread, and shape of the data distribution

ITEM

33 The list shows the area in square feet of each apartment available for rent in a building.

565, 961, 867, 517, 627, 714, 517, 728

What is the range of these areas in square feet?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

Item Analysis	
Verb	Summarize
Using or Including	Range
Concept	Numerical Data
Process TEKS	**6.1B, 6.1E, 6.1F**

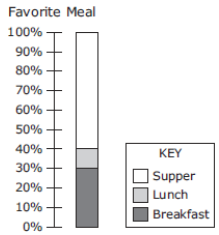
Notes

TEKS 6.12D Readiness Standard

summarize categorical data with numerical and graphical summaries, including the mode, the percent of values in each category (relative frequency table), and the percent bar graph, and use these summaries to describe the data distribution

ITEM

4 The students in a class were each asked to name their favorite meal of the day. The results are shown in this percentage bar graph.



Which table could be represented by the percentage bar graph?

F

Student Results

Meal	Number of Students
Breakfast	3
Lunch	4
Supper	10

H

Student Results

Meal	Number of Students
Breakfast	9
Lunch	3
Supper	18

G

Student Results

Meal	Number of Students
Breakfast	4
Lunch	4
Supper	12

J

Student Results

Meal	Number of Students
Breakfast	0
Lunch	3
Supper	4

Item Analysis	
Verb	Summarized
Using or Including	Percent Bar Graph Frequency Tables
Concept	Data Distribution
Process TEKS	**6.1A, 6.1B, 6.1D, 6.1F**

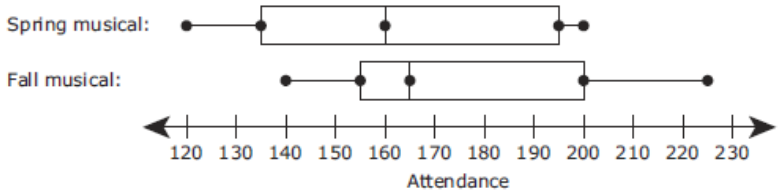
Notes

TEKS 6.13A Readiness Standard

interpret numeric data summarized in dot plots, stem-and-leaf plots, histograms, and box plots

ITEM

14 The box plots summarize the attendance for the spring musical and the fall musical. Each musical was performed for six evenings.



Which statement best describes the data represented in the box plots?

F The range in attendance for the fall musical is 85.

G The interquartile range for the spring musical is 45.

H For half the evenings at the fall musical, the attendance was less than 160 people.

J For half the evenings at the spring musical, the attendance was between 155 and 200 people.

Item Analysis	
Verb	Interpret
Using or Including	Box Plots
Concept	Numeric Data Summarized
Process TEKS	**6.1A, 6.1B, 6.1E, 6.1G**

Notes

TEKS 6.13A Readiness Standard
interpret numeric data summarized in dot plots, stem-and-leaf plots, histograms, and box plots

ITEM

28 The total number of items sold by each student who participated in a fund-raiser is shown in the stem and leaf plot.

Items Sold

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

1|2 means 12 items.

Which statement is best supported by the data in the stem and leaf plot?

F The number of students who sold between 10 and 20 items is greater than the number of students who sold more than 40 items.

G The number of students who sold more than 30 items is greater than the number of students who sold fewer than 30 items.

H The most common number of items sold is 30.

J The most common number of items sold is 15.

Item Analysis

Verb	Interpret
Using or Including	Stem-and-Leaf Plot
Concept	Numeric Data Summarized
Process TEKS	**6.1A, 6.1B, 6.1E, 6.1G**

Notes

TEKS 6.14B Supporting Standard
distinguish between debit cards and credit cards

ITEM

12 Mr. Lloyd wants to buy a new television, but he does not have enough money in his bank account to pay for one. Which of these is NOT an option for Mr. Lloyd?

F He can use his credit card to buy the television now.

G He can save money and pay cash for the television at a later date.

H He can use his debit card to buy the television now.

J He can save money and use his debit card to buy the television at a later date.

Item Analysis

Verb	Distinguish
Using or Including	NA
Concept	Debit and Credit Cards
Process TEKS	**6.1A, 6.1B, 6.1F**

Notes

TEKS 6.14H Supporting Standard
compare the annual salary of several occupations requiring various levels of post-secondary education or vocational training and calculate the effects of the different annual salaries on lifetime income

ITEM

23 Yvonne is researching the effect of education on annual income. A summary of her research is shown in the table.

Effect of Education on Annual Income

Level of Education	Annual Income (dollars)
High school diploma	33,904
Associate's degree	40,820
Bachelor's degree	55,432

Based on the data in the table, how much more does a person with an associate's degree earn than a person with only a high school diploma over 10 years?

A $6,916
B $74,724
C $747,240
D $69,160

Item Analysis	
Verb	Calculate
Using or Including	NA
Concept	Annual Salaries
Process TEKS	**6.1A, 6.1B, 6.1E, 6.1F**

Notes

Item Analysis	
Verb	
Using or Including	
Concept	
Process TEKS	

Notes

Category 1
Numerical Representations and Relationships
10 Total Questions

TEKS	Item	Correct Answer	Process TEKS
6.2A classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to describe relationships between sets of numbers	NT		
6.2B identify a number, its opposite, and its absolute value	NT		
6.2C locate, compare, and order integers and rational numbers using a number line	18	G	
6.2D order a set of rational numbers arising from mathematical and real-world contexts	1	C	
	20	J	
6.2E extend representations for division to include fraction notation such as a/b represents the same number as a ÷ b where b ≠ 0	34	F	
6.4C give examples of ratios as multiplicative comparisons of two quantities describing the same attribute	3	A	
6.4D give examples of rates as the comparison by division of two quantities having different attributes, including rates as quotients	NT		
6.4E represent ratios and percents with concrete models, fractions, and decimals	NT		
6.4F represent benchmark fractions and percents such as 1%, 10%, 25%, 33 1/3%, and multiples of these values using 10 by 10 grids, strip diagrams, number lines, and numbers	NT		
6.4G generate equivalent forms of fractions, decimals, and percents using real-world problems, including problems that involve money	36	H	
6.5C use equivalent fractions, decimals, and percents to show equal parts of the same whole	NT		
6.7A generate equivalent numerical expressions using order of operations, including whole number exponents, and prime factorization	9	D	
	21	5	
6.7B distinguish between expressions and equations verbally, numerically, and algebraically	NT		
6.7C determine if two expressions are equivalent using concrete models, pictorial models, and algebraic representations	NT		
6.7D generate equivalent expressions using the properties of operations: inverse, identity, commutative, associative, and distributive properties	16	H	
	30	G	

Shaded - Readiness TEKS, NT - Not Tested
Readiness TEKS - 7/10 questions

Category 2
Computations and Algebraic Relationships
15 Total Questions

TEKS	Item	Correct Answer	Process TEKS
6.3A recognize that dividing by a rational number and multiplying by its reciprocal result in equivalent values	NT		
6.3B determine, with and without computation, whether a quantity is increased or decreased when multiplied by a fraction, including values greater than or less than one	19	C	
6.3C represent integer operations with concrete models and connect the actions with the models to standardized algorithms	NT		
6.3D add, subtract, multiply, and divide integers fluently	25	D	
6.3E multiply and divide positive rational numbers fluently	6	J	
6.4A compare two rules verbally, numerically, graphically, and symbolically in the form of y = ax or y = x + a in order to differentiate between additive and multiplicative relationships	NT		
6.4B apply qualitative and quantitative reasoning to solve prediction and comparison of real-world problems involving ratios and rates	17	A	
	29	320	
6.5A represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions	24	F	
6.5B solve real-world problems to find the whole given a part and the percent, to find the part given the whole and the percent, and to find the percent given the part and the whole, including the use of concrete and pictorial models	11	D	
	32	G	
6.6A identify independent and dependent quantities from tables and graphs	NT		
6.6B write an equation that represents the relationship between independent and dependent quantities from a table	NT		
6.6C represent a given situation using verbal descriptions, tables, graphs, and equations in the form y = kx or y = x + b	13	D	
	27	A	
6.9A write one-variable, one-step equations and inequalities to represent constraints or conditions within problems	8	F	
6.9B represent solutions for one-variable, one-step equations and inequalities on number lines	NT		
6.9C write corresponding real-world problems given one-variable, one-step equations or inequalities	15	B	
6.10A model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts	5	B	
	31	C	
6.10B determine if the given value(s) make(s) one-variable, one-step equations or inequalities true	35	D	

Shaded - Readiness TEKS, NT - Not Tested
Readiness TEKS - 10/15 questions

Category 3
Geometry and Measurement
6 Total Questions

TEKS	Item	Correct Answer	Process TEKS
6.4H convert units within a measurement system, including the use of proportions and unit rates	**38**	**F**	
6.8A extend previous knowledge of triangles and their properties to include the sum of angles of a triangle, the relationship between the lengths of sides and measures of angles in a triangle, and determining when three lengths form a triangle	**10**	**55**	
6.8B model area formulas for parallelograms, trapezoids, and triangles by decomposing and rearranging parts of these shapes	**NT**		
6.8C write equations that represent problems related to the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers	**22**	**J**	
6.8D determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers	**7**	**B**	
	26	**G**	
6.11A graph points in all four quadrants using ordered pairs of rational numbers	**2**	**G**	

Shaded - Readiness TEKS, NT - Not Tested
Readiness TEKS - 4/6 questions

Category 4
Data Analysis and Personal Finance
7 Total Questions

TEKS	Item	Correct Answer	Process TEKS
6.12A represent numeric data graphically, including dot plots, stem-and-leaf plots, histograms, and box plots	**NT**		
6.12B use the graphical representation of numeric data to describe the center, spread, and shape of the data distribution	**37**	**B**	
6.12C summarize numeric data with numerical summaries, including the mean and median (measures of center) and the range and interquartile range (IQR) (measures of spread), and use these summaries to describe the center, spread, and shape of the data distribution	**33**	**444**	
6.12D summarize categorical data with numerical and graphical summaries, including the mode, the percent of values in each category (relative frequency table), and the percent bar graph, and use these summaries to describe the data distribution	**4**	**H**	
6.13A interpret numeric data summarized in dot plots, stem-and-leaf plots, histograms, and box plots	**14**	**F**	
	28	**J**	
6.13B distinguish between situations that yield data with and without variability	**NT**		
6.14A compare the features and costs of a checking account and a debit card offered by different local financial institutions	**NT**		
6.14B distinguish between debit cards and credit cards	**12**	**H**	
6.14C balance a check register that includes deposits, withdrawals, and transfers	**NT**		
6.14E describe the information in a credit report and how long it is retained	**NT**		
6.14F describe the value of credit reports to borrowers and to lenders	**NT**		
6.14G explain various methods to pay for college, including through savings, grants, scholarships, student loans, and work-study	**NT**		
6.14H compare the annual salary of several occupations requiring various levels of post-secondary education or vocational training and calculate the effects of the different annual salaries on lifetime income	**23**	**D**	

Shaded - Readiness TEKS, NT - Not Tested
Readiness TEKS - 4/7 questions