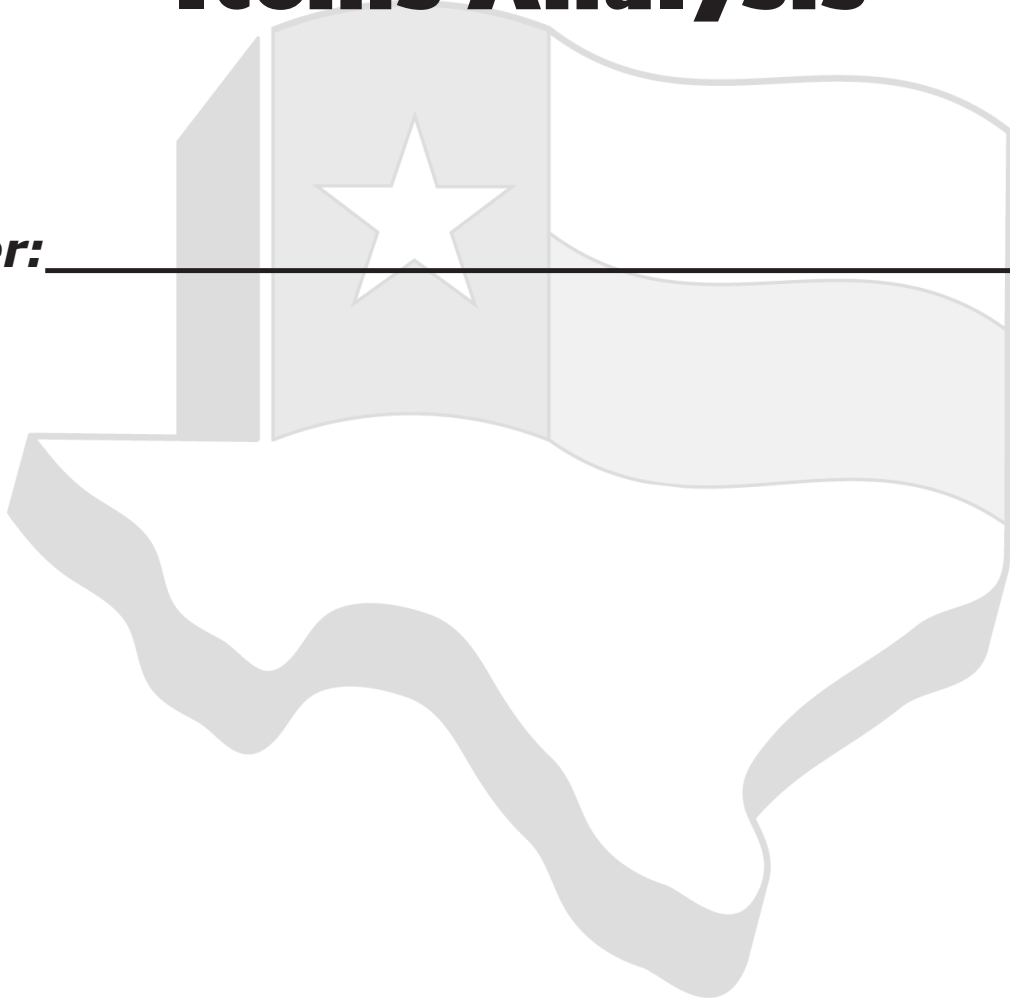


Step Up to the TEKS
by GF Educators, Inc.

Seventh Grade Mathematics

2017 Released Items Analysis

Teacher: _____



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Edition I



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7th Grade Mathematics

Released Items

Name: _____

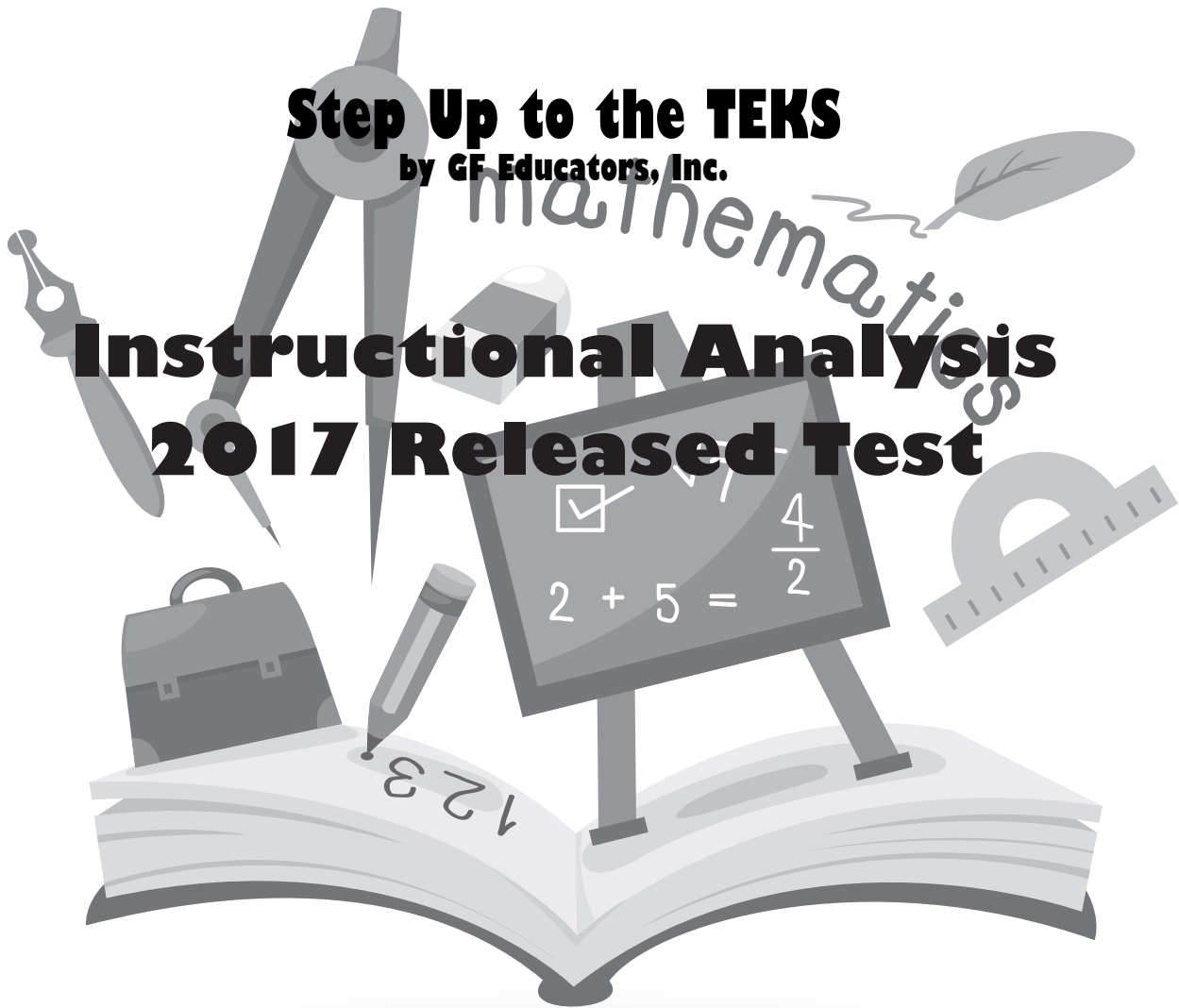
Teacher: _____

Date: _____

Step Up to the TEKS

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Instructional Analysis 2017 Released Test



TEKS 7.6C Supporting Standard
make predictions and determine solutions using experimental data for simple and compound events

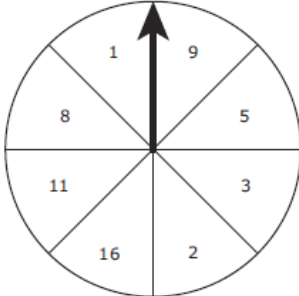
ITEM 31 A study of a population of 1,200 frogs revealed that 12 out of every 180 frogs in the population have spots on their back. Based on the results of this study, how many frogs in the population do NOT have spots on their back?

A 80
B 168
C 1,280
D 1,120

Item Analysis	
Verb	Make
Using or Including	Experimental Data
Concept	Simple Events
Process TEKS	7.1A, 7.1B, 7.1F
Notes	

TEKS 7.6D Supporting Standard
make predictions and determine solutions using theoretical probability for simple and compound events

ITEM 17 The spinner shown has eight congruent sections.



The spinner is spun 120 times. What is a reasonable prediction for the number of times the spinner will land on an even number?

A 75
B 45
C 15
D 40

Item Analysis	
Verb	Make
Using or Including	Theoretical Probability
Concept	Simple Events
Process TEKS	7.1A, 7.1B, 7.1E, 7.1F
Notes	

TEKS 7.6H Readiness Standard solve problems using qualitative and quantitative predictions and comparisons from simple experiments			
<p>ITEM 1 Mari bought 6 packets of tomato seeds. Each packet contained 24 seeds. She planted 1 packet of the seeds, and 15 seeds sprouted.</p> <p>Which statement about the seeds in the remaining packets is best supported by this information?</p> <p>A No more than 50 seeds will sprout. B Between 50 and 100 seeds will sprout. C At least 100 but no more than 120 seeds will sprout. D All 120 seeds will sprout.</p>	Item Analysis		
	<table border="1"> <tr> <td>Verb</td> <td>Solve</td> </tr> </table>	Verb	Solve
	Verb	Solve	
	<table border="1"> <tr> <td>Using or Including</td> <td>Simple Experiments</td> </tr> </table>	Using or Including	Simple Experiments
	Using or Including	Simple Experiments	
<table border="1"> <tr> <td>Concept</td> <td>Qualitative and Quantitative Predictions</td> </tr> </table>	Concept	Qualitative and Quantitative Predictions	
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<table border="1"> <tr> <td>Process TEKS</td> <td>7.1A, 7.1B, 7.1G</td> </tr> </table>	Process TEKS	7.1A, 7.1B, 7.1G	
Process TEKS	7.1A, 7.1B, 7.1G		
Notes			

TEKS 7.6H Readiness Standard solve problems using qualitative and quantitative predictions and comparisons from simple experiments			
<p>ITEM 37 Leticia has two bouquets of flowers. Each bouquet contains 13 daisies.</p> <ul style="list-style-type: none"> Bouquet S contains 30 flowers. Bouquet T contains 13 flowers. <p>Which statement is true?</p> <p>A The probability of randomly selecting a daisy from Bouquet S is less than the probability of randomly selecting a daisy from Bouquet T. B The probability of randomly selecting a daisy from Bouquet S is 1. C The probability of randomly selecting a daisy from Bouquet S is equal to the probability of randomly selecting a daisy from Bouquet T. D The probability of randomly selecting a daisy from Bouquet S is $\frac{1}{3}$.</p>	Item Analysis		
	<table border="1"> <tr> <td>Verb</td> <td>Solve</td> </tr> </table>	Verb	Solve
	Verb	Solve	
	<table border="1"> <tr> <td>Using or Including</td> <td>Simple Experiments</td> </tr> </table>	Using or Including	Simple Experiments
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Process TEKS	7.1A, 7.1B, 7.1G		
Notes			

TEKS 7.6I Readiness Standard determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces		
<p>ITEM 11 Tara has two bags of marbles. The first bag contains 6 red marbles, 5 blue marbles, and 4 green marbles. The second bag contains 3 red marbles, 2 blue marbles, and 4 green marbles. Tara will randomly select 1 marble from each bag.</p> <p>What is the probability that Tara will select a blue marble from each bag?</p> <p>A $\frac{5}{9}$ B $\frac{1}{135}$ C $\frac{1}{6}$ D $\frac{2}{27}$</p>	Item Analysis	
	Verb	Determine
	Using or Including	Sample Spaces
	Concept	Theoretical Probability
	Process TEKS	7.1A, 7.1B, 7.1F
Notes		

TEKS 7.6I Readiness Standard determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces		
<p>ITEM 28 Rachel is setting up tables for a party. Four of the tables are covered with red tablecloths, and eight of the tables are covered with white tablecloths. Guests will be randomly seated at the tables when they arrive. Each table can seat 8 guests.</p> <p>What is the probability that the first guest to arrive will be seated at a table with a red tablecloth?</p> <p>F $\frac{1}{2}$ G $\frac{1}{3}$ H $\frac{1}{4}$ J $\frac{1}{8}$</p>	Item Analysis	
	Verb	Determine
	Using or Including	Data
	Concept	Theoretical Probability
	Process TEKS	7.1A, 7.1B, 7.1F
Notes		

TEKS 7.3A Supporting Standard
add, subtract, multiply, and divide rational numbers fluently

ITEM
23 Stephanie has $3\frac{3}{4}$ bags of soil to put in her garden. Each bag of soil will cover 125.3 ft^2 . How many square feet will Stephanie be able to cover if she uses all these bags of soil?

A 469.875 ft^2
B 375.225 ft^2
C 407.225 ft^2
D 418.502 ft^2

Item Analysis	
Verb	Multiply
Using or Including	Fluently
Concept	Rational Numbers
Process TEKS	7.1A, 7.1B, 7.1F
Notes	

TEKS 7.3B Readiness Standard
apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers

ITEM
5 The table shows the prices of some breakfast items at a restaurant. Sara ordered 2 eggs, a slice of bacon, and a glass of orange juice for breakfast. The sales tax for the order was \$0.48. She paid for her breakfast with a \$10 bill.

Breakfast Menu

Item	Price
One egg	\$1.69
Slice of bacon	\$1.49
Glass of orange juice	\$1.09

How much change should Sara receive from the \$10 bill?

A \$3.56
B \$6.44
C \$5.25
D \$4.75

Item Analysis	
Verb	Apply
Using or Including	Addition, Subtraction
Concept	Operations of Rational Numbers
Process TEKS	7.1A, 7.1B, 7.1E, 7.1F
Notes	

TEKS 7.3B Readiness Standard
apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers

ITEM

36 Rebecca needs $10\frac{1}{2}$ yards of fabric to make a quilt. She has one piece of fabric that is $2\frac{1}{2}$ yards and another piece of fabric that is $4\frac{1}{4}$ yards. How many more yards of fabric does Rebecca need to make the quilt?

- F $4\frac{1}{4}$ yd
- G $3\frac{1}{4}$ yd
- H $3\frac{3}{4}$ yd
- J $6\frac{3}{4}$ yd

Item Analysis

Verb	Apply
Using or Including	Addition, Subtraction
Concept	Operations of Rational Numbers
Process TEKS	7.1A, 7.1B, 7.1F

Notes

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

ITEM

9 Which of these does NOT represent the distance a car travels when going 55 miles per hour?

- A $d = 55t$, where d represents distance in miles and t represents time in hours

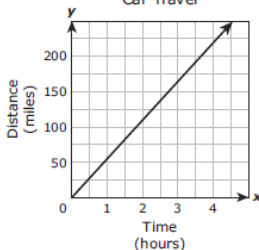
Car Travel

Time (hours)	Distance (miles)
1	55
1.5	82.5
2	110
2.5	137.5

- B

- C In 3 hours a car will travel a distance of 160 miles.

Car Travel



- D

Item Analysis

Verb	Represent
Using or Including	Tables, Graphical, Verbal Descriptions
Concept	Constant Rate of Change
Process TEKS	7.1B, 7.1D, 7.1F

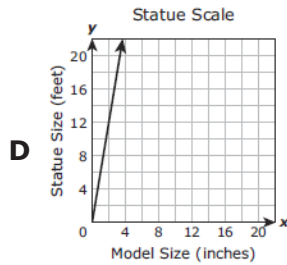
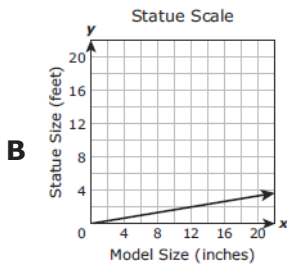
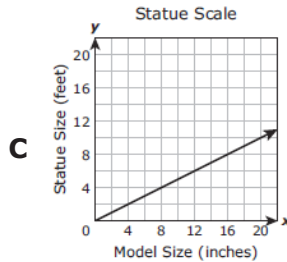
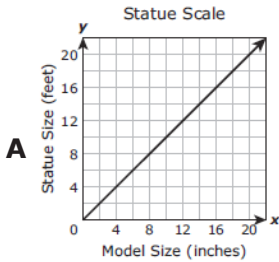
Notes

TEKS 7.4A Readiness Standard

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

ITEM

25 An artist is making a scale model of a statue. On the model 2 inches represents 1 foot on the actual statue. Which graph best represents this relationship?



Item Analysis

Verb	Represent
Using or Including	Graphical, Verbal Description
Concept	Constant Rate of Change
Process TEKS	7.1A, 7.1B, 7.1D, 7.1F

Notes

TEKS 7.4B Supporting Standard

calculate unit rates from rates in mathematical and real-world problems

ITEM

12 José paid \$47.00 for 4 movie tickets. Each ticket cost the same amount. What was the cost of each movie ticket in dollars and cents?

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

Item Analysis

Verb	Calculate
Using or Including	Real-World Problems
Concept	Unit Rates
Process TEKS	7.1A, 7.1B, 7.1F

Notes

TEKS 7.4D Readiness Standard

solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems

ITEM

14 The price of a video game was reduced from \$60 to \$45. By what percentage was the price of the video game reduced?

- F** 15%
- G** 25%
- H** 75%
- J** 40%

Item Analysis

Verb	Solve
Using or Including	Percent of Decrease
Concept	Percent Problems
Process TEKS	7.1A, 7.1B, 7.1F
Notes	

TEKS 7.4D Readiness Standard

solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems

ITEM

21 Kiara downloaded 264 pictures from her cell phone to her computer. These pictures took up 528 megabytes of space on her computer. Each picture took up the same amount of space. How many megabytes do 35 of these pictures take up?

- A** 18 MB
- B** 70 MB
- C** 8 MB
- D** 23 MB

Item Analysis

Verb	Solve
Using or Including	Percents
Concept	Percent Problems
Process TEKS	7.1A, 7.1B, 7.1F
Notes	

TEKS 7.7A Readiness Standard

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

ITEM

16 The table shows the distance, y , a cheetah can travel in feet in x seconds.

Speed of a Cheetah

Time, x (seconds)	Distance, y (feet)
5	470
10	940
15	1,410
20	1,880
25	2,350

Based on the information in the table, which equation can be used to model the relationship between x and y ?

- F** $y = 5x$
- G** $y = x + 5$
- H** $y = x + 470$
- J** $y = 94x$

Item Analysis

Verb

Represent

Using or Including

Table

Concept

Linear Relationships

Process TEKS

7.1A, 7.1B, 7.1D, 7.1F

Notes

TEKS 7.7A Readiness Standard

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

ITEM

38 A pilot takes a taxi from the airport to a hotel. The taxi driver charges a \$2.50 initial charge plus \$2.65 per mile. Which equation can be used to find y , the total cost of the trip, if x represents the number of miles of the trip?

- F** $y = 2.50x + 2.65$
- G** $y = 2.65(x + 2.50)$
- H** $y = 2.65x - 2.50$
- J** $y = 2.65x + 2.50$

Item Analysis

Verb

Represent

Using or Including

Verbal Description

Concept

Linear Relationship

Process TEKS

7.1A, 7.1B, 7.1D, 7.1F

Notes

TEKS 7.10A Supporting Standard
write one-variable, two-step equations and inequalities to represent constraints or conditions within problems

<p>ITEM 7 Lawrence’s father gave him 200 baseball cards. Each week, Lawrence purchases 25 baseball cards to add to his collection. Which inequality can be used to find w, the number of weeks after starting his collection when Lawrence will have more than 750 baseball cards in his collection?</p> <p>A $200w + 25 < 750$ B $25w + 200 < 750$ C $200w + 25 > 750$ D $25w + 200 > 750$</p>	Item Analysis	
	Verb	Write
	Using or Including	NA
	Concept	One-Variable, Two-Step Inequality
	Process TEKS	7.1A, 7.1B, 7.1D, 7.1F
Notes		

TEKS 7.10C Supporting Standard
write a corresponding real-world problem given a one-variable, two-step equation or inequality

<p>ITEM 33 Which situation can be represented by this inequality?</p> $1.25x - 6.50 > 50$ <p>A Stefan spends \$6.50 on supplies for a lemonade stand and sells each cup of lemonade for \$1.25. What is x, the number of cups of lemonade Stefan must sell to earn a profit of more than \$50? B Stefan has a balance of \$6.50 in his savings account and deposits \$1.25 each week. What is x, the number of weeks Stefan must deposit \$1.25 in order to have a balance of more than \$50 in his savings account? C Stefan earns 1.25% interest on the balance in his checking account and has to pay a monthly charge of \$6.50. What is x, the balance that Stefan must have in his checking account in order to have an ending balance greater than \$50 after interest and fees? D Stefan charges \$1.25 for gasoline plus \$6.50 per hour for mowing lawns. What is x, the number of hours he has to mow lawns to earn more than \$50?</p>	Item Analysis	
	Verb	Write
	Using or Including	NA
	Concept	One-Variable, Two-Step Inequality Problem
	Process TEKS	7.1A, 7.1B, 7.1D, 7.1F
Notes		

TEKS 7.11A Readiness Standard
model and solve one-variable, two-step equations and inequalities

ITEM 18 The model represents an inequality.

What is the solution set for the inequality?

F $x \leq 5$
G $x \leq 1$
H $x \leq 1$
J $x \leq 14$

Item Analysis	
Verb	Model and Solve
Using or Including	NA
Concept	One-Variable, Two-Step Inequalities
Process TEKS	7.1B, 7.1E, 7.1F
Notes	

TEKS 7.11A Readiness Standard
model and solve one-variable, two-step equations and inequalities

ITEM 27 What is the solution to this equation?

$$30.16 = 17.56 + 5x$$

A 6.032
B 3.512
C 12.6
D 2.52

Item Analysis	
Verb	Solve
Using or Including	NA
Concept	One-Variable, Two-Step Equation
Process TEKS	7.1B, 7.1F
Notes	

TEKS 7.11B Supporting Standard
determine if the given value(s) make(s) one-variable, two-step equations and inequalities true

<p>ITEM 3 If $x = 14$, which equation is true?</p> <p>A $3(20 - x) = 44$ B $3(12 - x) = 6$ C $2(x - 3) = 22$ D $2x - 3 = 22$</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">Item Analysis</th> </tr> <tr> <td style="width: 20%; text-align: center;">Verb</td> <td style="text-align: center;">Determine</td> </tr> <tr> <td style="text-align: center;">Using or Including</td> <td style="text-align: center;">Equation</td> </tr> <tr> <td style="text-align: center;">Concept</td> <td style="text-align: center;">Value True</td> </tr> <tr> <td style="text-align: center;">Process TEKS</td> <td style="text-align: center;">7.1B, 7.1F</td> </tr> <tr> <td colspan="2" style="text-align: center;">Notes</td> </tr> <tr> <td colspan="2" style="height: 100px;"></td> </tr> </table>	Item Analysis		Verb	Determine	Using or Including	Equation	Concept	Value True	Process TEKS	7.1B, 7.1F	Notes			
Item Analysis															
Verb	Determine														
Using or Including	Equation														
Concept	Value True														
Process TEKS	7.1B, 7.1F														
Notes															

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Item Analysis															
Verb															
Using or Including															
Concept															
Process TEKS															
Notes															

TEKS 7.4E Supporting Standard

convert between measurement systems, including the use of proportions and the use of unit rates

ITEM

10 Some doctors recommend that men drink 3 liters of water every day. There are approximately 29.6 milliliters in 1 fluid ounce. Which measurement is closest to the number of fluid ounces in 3 liters?

- F** 89 fl oz
- G** 101 fl oz
- H** 10 fl oz
- J** 33 fl oz

Item Analysis

Verb	Convert
Using or Including	Unit Rate
Concept	Between Measurement Systems
Process TEKS	7.1A, 7.1B, 7.1F

Notes

TEKS 7.5A Supporting Standard

generalize the critical attributes of similarity, including ratios within and between similar shapes

ITEM

39 Mr. Ortiz used similar triangles to make a design. Which statement about the triangles in the design must be true?

- A** They are the same size and shape.
- B** They are the same size but different shapes.
- C** They have corresponding angles that are congruent.
- D** They have corresponding sides that are congruent.

Item Analysis

Verb	Generalize
Using or Including	NA
Concept	Critical Attributes of Similarity
Process TEKS	7.1A, 7.1B, 7.1G

Notes

TEKS 7.5C Readiness Standard
solve mathematical and real-world problems involving similar shape and scale drawings

ITEM 2 Triangle ABC is similar to triangle FGH.

What is the value of x in centimeters?

F 22.5 cm
G 8 cm
H 10.8 cm
J 30 cm

Item Analysis	
Verb	Solve
Using or Including	Similar Shapes
Concept	Similarity Problems
Process TEKS	7.1B, 7.1E, 7.1F
Notes	

TEKS 7.5C Readiness Standard
solve mathematical and real-world problems involving similar shape and scale drawings

ITEM 35 The distance between two cities on a map is 3.5 centimeters. The map uses a scale in which 1 centimeter represents 20 kilometers. What is the actual distance between these two cities in kilometers?

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

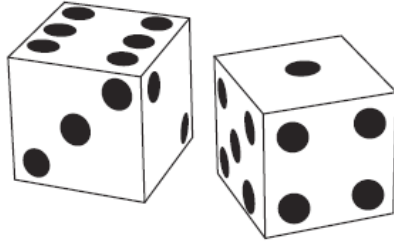
Item Analysis	
Verb	Solve
Using or Including	Scale Drawing
Concept	Similarity Problems
Process TEKS	7.1A, 7.1B, 7.1F
Notes	

TEKS 7.9A Readiness Standard

solve problems involving the volume of rectangular prisms, triangular prisms, rectangular pyramids, and triangular pyramids

ITEM

13 Two identical number cubes are shown in the picture. The edge length of these number cubes is 3 centimeters.



What is the combined volume of the two number cubes in cubic centimeters?

- A 54 cm³
- B 18 cm³
- C 9 cm³
- D 27 cm³

Item Analysis

Verb	Solve
Using or Including	Rectangular Prisms
Concept	Volume
Process TEKS	7.1A, 7.1B, 7.1E, 7.1F

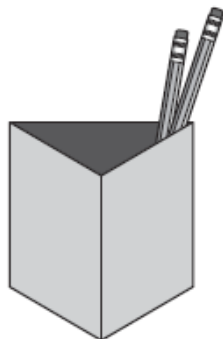
Notes

TEKS 7.9A Readiness Standard

solve problems involving the volume of rectangular prisms, triangular prisms, rectangular pyramids, and triangular pyramids

ITEM

22 A pencil holder shaped like a triangular prism is shown in the picture. The height of the pencil holder is 12 cm, and the volume of the pencil holder is 216 cm³.



What is the area of the base of the pencil holder in square centimeters?

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

Item Analysis

Verb	Solve
Using or Including	Triangular Prisms
Concept	Volume
Process TEKS	7.1A, 7.1B, 7.1E, 7.1F

Notes

TEKS 7.9B Readiness Standard
determine the circumference and area of circles

ITEM

8 A circular tablecloth has a radius of 2.5 feet. Kyle is sewing a piece of ribbon around the edge of the tablecloth. If Kyle has exactly enough ribbon, which measurement is closest to the length of the piece of ribbon in feet?

- F** 7.85 ft
- G** 15.7 ft
- H** 19.63 ft
- J** 31.4 ft

Item Analysis

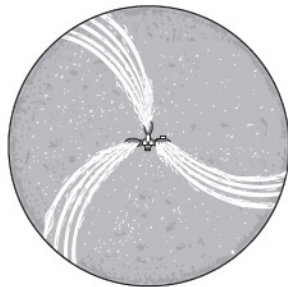
Verb	Determine
Using or Including	NA
Concept	Circumference
Process TEKS	7.1A, 7.1B, 7.1F

Notes

TEKS 7.9B Readiness Standard
determine the circumference and area of circles

ITEM

32 A rotating lawn sprinkler sprays water in a circular area of grass, as shown in the picture. The diameter of the circular area of grass is 16 ft.



Which measurement is closest to the area in square feet that this sprinkler sprays with water?

- F** 100.48 ft²
- G** 50.24 ft²
- H** 200.96 ft²
- J** 803.84 ft²

Item Analysis

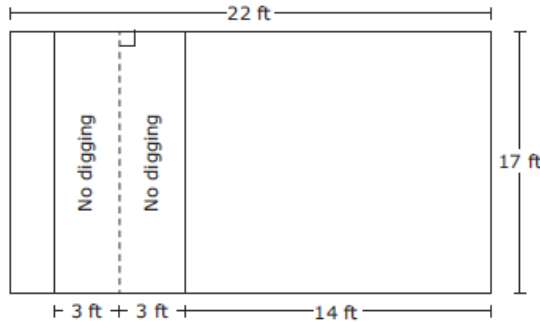
Verb	Determine
Using or Including	NA
Concept	Area
Process TEKS	7.1A, 7.1B, 7.1E, 7.1F

Notes

TEKS 7.9C Readiness Standard
determine the area of composite figures containing combinations of rectangles, squares, parallelograms, trapezoids, triangles, semicircles, and quarter circles

ITEM

4 A utility line runs underground through Shayne’s rectangular backyard. Shayne is not allowed to dig within 3 feet of the utility line. The diagram below shows the dimensions of Shayne’s backyard in feet. The dashed line represents the utility line.



What is the area in square feet of the part of the backyard in which Shayne is allowed to dig?

- F** 272 ft²
- G** 374 ft²
- H** 102 ft²
- J** 59 ft²

Item Analysis

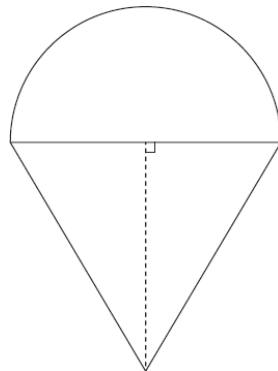
Verb	Determine
Using or Including	Rectangles
Concept	Area of Composite Figures
Process TEKS	7.1A, 7.1B, 7.1E, 7.1F

Notes

TEKS 7.9C Readiness Standard
determine the area of composite figures containing combinations of rectangles, squares, parallelograms, trapezoids, triangles, semicircles, and quarter circles

ITEM

19 A figure was created using a triangle and a semicircle. Use the ruler provided to measure the dimensions of the triangle and the semicircle to the nearest centimeter.



Which measurement is closest to the area of the figure in square centimeters?

- A** 78 cm²
- B** 81 cm²
- C** 106 cm²
- D** 53 cm²

Item Analysis

Verb	Determine
Using or Including	Semicircle, Triangle
Concept	Area of Composite Figures
Process TEKS	7.1B, 7.1E, 7.1F

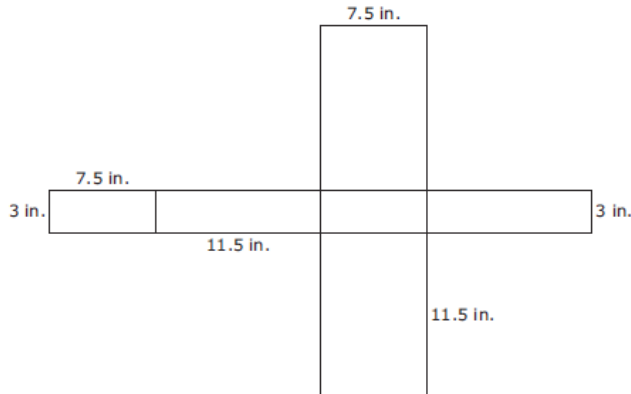
Notes

TEKS 7.9D Supporting Standard

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

ITEM

29 The net of a rectangular prism and its dimensions are shown in the diagram.



What is the total surface area of the rectangular prism in square inches?

- A** 143.25 in.²
- B** 241.5 in.²
- C** 258.75 in.²
- D** 286.5 in.²

Item Analysis

Verb	Solve
Using or Including	Rectangular Prism
Concept	Total Surface Area
Process TEKS	7.1A, 7.1B, 7.1E, 7.1F

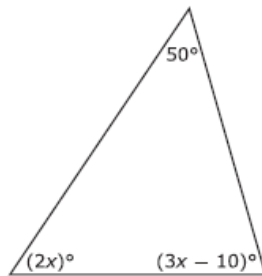
Notes

TEKS 7.11C Supporting Standard

write and solve equations using geometry concepts, including the sum of the angles in a triangle, and angle relationships

ITEM

24 The angle measures of a triangle are shown in the diagram.



What is the value of x ?

- F** 25
- G** 20
- H** 10
- J** 28

Item Analysis

Verb	Solve
Using or Including	Sum of Angle in a Triangle
Concept	Equations of Geometric Concepts
Process TEKS	7.1B, 7.1E, 7.1F

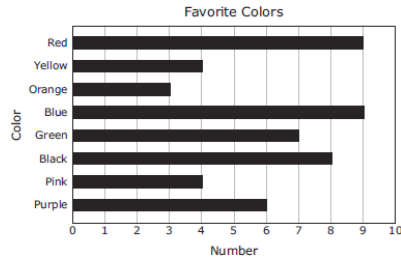
Notes

TEKS 7.6G Readiness Standard

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

ITEM

15 The graph shows the favorite colors chosen by some middle school students.



Which statement is supported by the information in the graph?

- A** Fewer than 30% of the students chose red, yellow, or orange as their favorite color.
- B** More than $\frac{1}{10}$ of the students chose pink as their favorite color.
- C** Exactly 18% of the students chose blue as their favorite color.
- D** Exactly $\frac{2}{5}$ of the students chose green, black, or purple as their favorite color.

Item Analysis

Verb	Solve
Using or Including	Bar Graph
Concept	Data
Process TEKS	7.1A, 7.1B, 7.1E, 7.1G

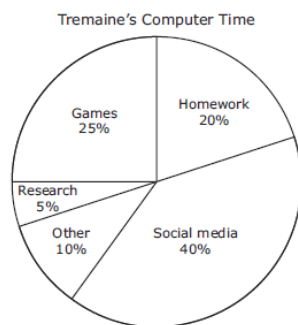
Notes

TEKS 7.6G Readiness Standard

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

ITEM

26 The circle graph shows how Tremaine divided his time on the computer last week.



Tremaine used the computer a total of 30 hours last week. How many more hours did Tremaine use the computer to play games than to do research?

- F** 6 hours
- G** 20 hours
- H** 7.5 hours
- J** 1.5 hours

Item Analysis

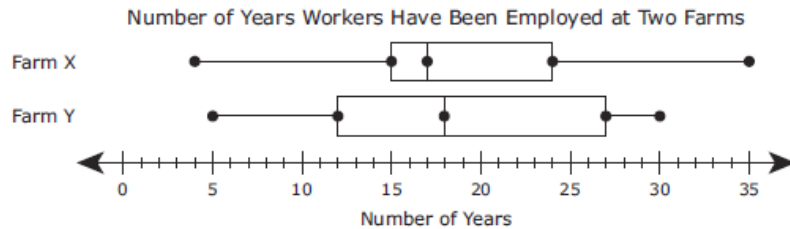
Verb	Solve
Using or Including	Circle Graph
Concept	Data
Process TEKS	7.1A, 7.1B, 7.1E, 7.1F

Notes

TEKS 7.12A Readiness Standard

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

6 The box plots show data about the number of years that farm workers have been employed at each of two farms.



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

- F** The range of the data for Farm Y is equal to the range of the data for Farm X.
- G** The third quartile of the data for Farm Y is less than the third quartile of the data for Farm X.
- H** The median of the data for Farm Y is greater than the median of the data for Farm X.
- J** The first quartile of the data for Farm Y is greater than the first quartile of the data for Farm X.

Item Analysis

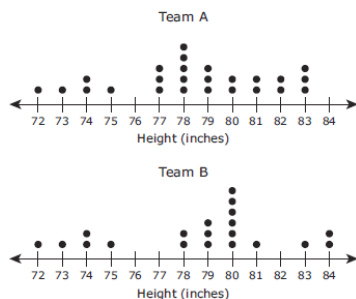
Verb	Compare
Using or Including	Centers, Spread
Concept	Two Groups of Numeric Data
Process TEKS	7.1A, 7.1B, 7.1E, 7.1G

Notes

TEKS 7.12A Readiness Standard

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

ITEM 34 The dot plots show the heights of the players on two basketball teams.



- Which statement is best supported by these data?
- F** The distributions of the data for Team A and Team B are approximately symmetrical.
 - G** The median height of the players on Team B is less than the median height of the players on Team A.
 - H** Team B has a greater range in player heights than Team A has.
 - J** The mode height of the players on Team B is less than the mode height of the players on Team A.

Item Analysis

Verb	Compare
Using or Including	Shapes, Centers, Spread
Concept	Two Groups of Numeric Data
Process TEKS	7.1A, 7.1B, 7.1E, 7.1G

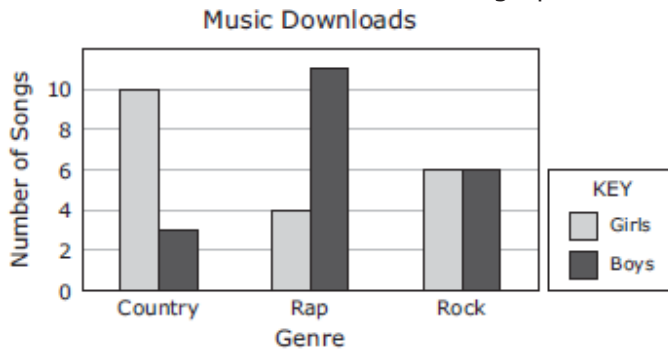
Notes

TEKS 7.12C Supporting Standard

compare two populations based on data in random samples from these populations, including informal comparative inferences about differences between the two populations

ITEM

40 Parker conducted a random survey at the mall to determine the number of songs in each genre that were downloaded by 40 students. The results are shown in the bar graph.



Based on the information in the graph, which inference about the general population of students is valid?

- F** Girls like country music more than all other genres combined.
- G** More girls than boys like rock music.
- H** Boys like country music more than rock music.
- J** Boys like rock music more than girls like rap music.

Item Analysis

Verb	Compare
Using or Including	Informal Comparative Inferences
Concept	Two Populations
Process TEKS	7.1A, 7.1B, 7.1E, 7.1G

Notes

TEKS 7.13A Supporting Standard

calculate the sales tax for a given purchase and calculate income tax for earned wages

ITEM

30 A doctor has an annual income of \$152,125. The income tax the doctor has to pay is 6%. What is the amount of income tax in dollars and cents that the doctor has to pay?

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

Item Analysis

Verb	Calculate
Using or Including	NA
Concept	Income Tax
Process TEKS	7.1A, 7.1B, 7.1F

Notes

TEKS 7.13B Supporting Standard

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

ITEM

20 In Oscar's monthly budget, each category is assigned a certain percentage of his monthly income. Oscar's monthly income is \$2,250.

Monthly Budget

Category	Percentage
Savings	16%
House payment	35%
Telephone	5%
Utilities	6%
Car payment	17.5%
Car insurance	6.5%
Life insurance	3%
Emergencies	11%

Which statement is NOT supported by the information in the table?

- F** Oscar puts \$360 of his monthly income into savings.
- G** Less than \$900 of Oscar's monthly income is for his house payment and life insurance.
- H** Oscar budgets \$485 of his monthly income for telephone, utilities, and emergencies.
- J** More than \$530 of Oscar's monthly income is for his car payment and car insurance.

Item Analysis

Verb

Identify

Using or Including

Calculate Percentages

Concept

Components of a Personal Budget

Process TEKS

7.1A, 7.1B, 7.1E, 7.1G

Notes

Item Analysis

Verb

Using or Including

Concept

Process TEKS

Notes

Category 1
Probability and Numerical Representations
6 Total Questions

TEKS	Item	Correct Answer	Process TEKS
7.2A extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of rational numbers	NT		
7.6A represent sample spaces for simple and compound events using lists and tree diagrams	NT		
7.6C make predictions and determine solutions using experimental data for simple and compound events	31	D	
7.6D make predictions and determine solutions using theoretical probability for simple and compound events	17	B	
7.6E find the probabilities of a simple event and its complement and describe the relationship between the two	NT		
7.6H solve problems using qualitative and quantitative predictions and comparisons from simple experiments	1	B	
	37	A	
7.6I determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces	11	D	
	28	G	

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

Category 2
Computations and Algebraic Relationships
15 Total Questions

TEKS	Item	Correct Answer	Process TEKS
7.3A add, subtract, multiply, and divide rational numbers fluently	23	A	
7.3B apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers	5	A	
	36	H	
7.4A represent constant rates of change in mathematical and real-world problems given pictorial, tabular, verbal, numeric, graphical, and algebraic representations, including $d = rt$	9	C	
	25	C	
7.4B calculate unit rates from rates in mathematical and real-world problems	12	11.75	
7.4C determine the constant of proportionality ($k = y/x$) within mathematical and real-world problems	NT		
7.4D solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems	14	G	
	21	B	
7.7A represent linear relationships using verbal descriptions, tables, graphs, and equations that simplify to the form $y = mx + b$	16	J	
	38	J	
7.10A write one-variable, two-step equations and inequalities to represent constraints or conditions within problems	7	D	
7.10B represent solutions for one-variable, two-step equations and inequalities on number lines	NT		
7.10C write a corresponding real-world problem given a one-variable, two-step equation or inequality	33	A	
7.11A model and solve one-variable, two-step equations and inequalities	18	F	
	27	D	
7.11B determine if the given value(s) make(s) one-variable, two-step equations and inequalities true	3	C	

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

Category 3
Geometry and Measurement
12 Total Questions

TEKS	Item	Correct Answer	Process TEKS
7.4E convert between measurement systems, including the use of proportions and the use of unit rates	10	G	
7.5A generalize the critical attributes of similarity, including ratios within and between similar shapes	39	C	
7.5B describe π as the ratio of the circumference of a circle to its diameter	NT		
7.5C solve mathematical and real-world problems involving similar shape and scale drawings	2	F	
	35	70	
7.9A solve problems involving the volume of rectangular prisms, triangular prisms, rectangular pyramids, and triangular pyramids	13	A	
	22	18	
7.9B determine the circumference and area of circles	8	G	
	32	H	
7.9C determine the area of composite figures containing combinations of rectangles, squares, parallelograms, trapezoids, triangles, semicircles, and quarter circles	4	F	
	19	D	
7.9D 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	29	D	
7.11C write and solve equations using geometry concepts, including the sum of the angles in a triangle, and angle relationships	24	J	

Shaded - Readiness TEKS, NT - Not Tested
 Readiness TEKS - 8/12 questions

Category 4
Data Analysis and Personal Finance
7 Total Questions

TEKS	Item	Correct Answer	Process TEKS
7.6G solve problems using data represented in bar graphs, dot plots, and circle graphs, including part-to-whole and part-to-part comparisons and equivalents	15	C	
	26	F	
7.12A compare two groups of numeric data using comparative dot plots or box plots by comparing their shapes, centers, and spreads	6	H	
	34	H	
7.12B use data from a random sample to make inferences about a population	NT		
7.12C compare two populations based on data in random samples from these populations, including informal comparative inferences about differences between the two populations	40	J	
7.13A calculate the sales tax for a given purchase and calculate income tax for earned wages	30	9127.5	
7.13B 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	20	H	
7.13C create and organize a financial assets and liabilities record and construct a net worth statement	NT		
7.13D use a family budget estimator to determine the minimum household budget and average hourly wage needed for a family to meet its basic needs in the student's city or another large city nearby	NT		
7.13E calculate and compare simple interest and compound interest earnings	NT		
7.13F analyze and compare monetary incentives, including sales, rebates, and coupons	NT		

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