

**GLNCOE
MATHMATICS**

Grade 6

Tennessee Comprehensive Assessment Program (TCAP)

Practice and Sample Test Workbook

Includes:

- Tennessee Mathematics Curriculum Standards, Grade 6, Correlated to *Glencoe Mathematics: Applications and Concepts*, Course 1
- Student Recording Chart
- Diagnostic Test
- Numerous Practice Questions for Each State Performance Indicator
- Full-Size Sample Test

Test-Taking Tips

- Go to bed early the night before the test. You will think more clearly after a good night's rest.
- Read each problem carefully and think about ways to solve the problem before you try to answer the question.
- Relax. Most people get nervous when taking a test. It's natural. Just do your best.
- Answer questions you are sure about first. If you do not know the answer to a question, skip it and go back to that question later.
- Think positively. Some problems may seem hard to you, but you may be able to figure out what to do if you read each question carefully.
- If no figure is provided, draw one. If one is furnished, mark it up to help you solve the problem.
- When you have finished each problem, reread it to make sure your answer is reasonable.
- Become familiar with a variety of formulas and when they should be used.
- Make sure that the number of the question on the answer sheet matches the number of the question on which you are working in your test booklet.



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*Tennessee Comprehensive Assessment Program (TCAP), Grade 6
Practice and Sample Test Workbook*

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Overview

The material in this booklet is designed to help you prepare for the Tennessee Comprehensive Assessment Program (TCAP).

It contains:

- a Student Recording Chart,
- Tennessee State Performance Indicators, Grade 6, Correlated to *Glencoe Mathematics: Applications and Concepts*, Course 1,
- a Diagnostic Test,
- practice for each SPI, and
- a Sample Test.

How to Use This Book

Diagnostic Test This test will help you identify any weaknesses you may have as you prepare to take the TCAP. Once you've taken the test and it's been graded, complete the Student Recording Chart that is found on page v. Mark an \times in the square for each question that you answered *incorrectly*.

Practice If you missed one or two of the questions for a particular SPI, you could probably use some extra practice with that State Performance Indicator. The Student Recording Chart lists practice pages for each SPI. Complete the appropriate practice pages. If you are unsure about how to do some of the problems, you may want to refer to your mathematics book.

Sample Test After you have completed your practice worksheet(s), take the Sample Test on pages 53 to 61.

Student Recording Chart

Directions Mark an × by each question from the Diagnostic Test that you answered *incorrectly*. If there are one or two ×s marked for a State Performance Indicator, write *Yes* in the *Need Practice?* box. Then complete the practice pages for that State Performance Indicator.

SPI	6.1.spi.1	6.1.spi.2	6.1.spi.3	6.1.spi.4	6.1.spi.5	6.1.spi.6	6.1.spi.7
Test Questions	4 <input type="checkbox"/>	19 <input type="checkbox"/>	26 <input type="checkbox"/>	37 <input type="checkbox"/>	9 <input type="checkbox"/>	24 <input type="checkbox"/>	1 <input type="checkbox"/>
Need Practice?							
Practice Pages	10	11	12	13	14	15	16

SPI	6.1.spi.8	6.1.spi.9	6.1.spi.10	6.1.spi.11	6.2.spi.1	6.2.spi.2
Test Questions	35 <input type="checkbox"/>	16 <input type="checkbox"/>	32 <input type="checkbox"/>	43 <input type="checkbox"/>	11 <input type="checkbox"/>	7 <input type="checkbox"/>
Need Practice?						
Practice Pages	17	18	19	20	21	22

SPI	6.2.spi.3	6.2.spi.4	6.2.spi.5	6.2.spi.6	6.2.spi.7	6.3.spi.1
Test Questions	17 <input type="checkbox"/>	20 <input type="checkbox"/> 30 <input type="checkbox"/>	21 <input type="checkbox"/>	3 <input type="checkbox"/>	39 <input type="checkbox"/>	22 <input type="checkbox"/> 23 <input type="checkbox"/>
Need Practice?						
Practice Pages	23	24	25	26	27	28

SPI	6.3.spi.2	6.3.spi.3	6.3.spi.4	6.3.spi.5	6.3.spi.6	6.3.spi.7
Test Questions	41 <input type="checkbox"/>	27 <input type="checkbox"/>	34 <input type="checkbox"/>	10 <input type="checkbox"/>	13 <input type="checkbox"/>	36 <input type="checkbox"/>
Need Practice?						
Practice Pages	29	30	31	32	33	34

SPI	6.4.spi.1	6.4.spi.2	6.4.spi.3	6.4.spi.4	6.4.spi.5	6.4.spi.6
Test Questions	33 <input type="checkbox"/>	25 <input type="checkbox"/>	14 <input type="checkbox"/>	31 <input type="checkbox"/>	8 <input type="checkbox"/>	44 <input type="checkbox"/>
Need Practice?						
Practice Pages	35	36	37	38	39	40

SPI	6.4.spi.7	6.4.spi.8	6.4.spi.9	6.5.spi.1	6.5.spi.2	6.5.spi.3
Test Questions	18 <input type="checkbox"/>	2 <input type="checkbox"/>	6 <input type="checkbox"/>	28 <input type="checkbox"/>	5 <input type="checkbox"/>	29 <input type="checkbox"/>
Need Practice?						
Practice Pages	41	42	43	44	45	46

SPI	6.5.spi.4	6.5.spi.5	6.5.spi.6	6.5.spi.7	6.5.spi.8	6.5.spi.9
Test Questions	15 <input type="checkbox"/>	38 <input type="checkbox"/>	12 <input type="checkbox"/>	45 <input type="checkbox"/>	40 <input type="checkbox"/>	42 <input type="checkbox"/>
Need Practice?						
Practice Pages	47	48	49	50	51	52

Tennessee State Performance Indicators, Grade 6, Correlated to *Glencoe Mathematics: Applications and Concepts, Course 1*

State Performance Indicator	Student Edition Lesson(s)
6.1.spi.1 identify the place value of a given digit;	3-1, 3-3, PS1
6.1.spi.2 solve one-step real-world problems involving whole numbers and decimals;	1-1, 1-5, 1-6, 3-3, 3-5, 4-1, 4-2, 4-3, 4-4
6.1.spi.3 represent numbers using a variety of models and equivalent forms (i.e., whole numbers, mixed numbers, fractions, decimals, and percents);	3-1a, 3-1, 3-3, 4-1a, 4-2a, 4-3, 4-4a, 5-2a, 5-2, 5-3, 5-5, 5-6, 6-1a, 6-1, 6-3, 6-4a, 6-5, 6-6, 7-1, 7-2a, 7-2, 7-3, 7-4a, 7-4, 10-4, 10-5, 10-6, 10-7a, 10-7, PS1, PS2
6.1.spi.4 connect whole numbers, mixed numbers, fractions, and decimals to locations on the number line;	3-2, 3-3, 5-3, 5-5, 6-1, 10-6, 11-1, PS2
6.1.spi.5 compare and order whole numbers, fractions, decimals, and percents using the appropriate symbol ($<$, $>$, $=$);	3-2, 5-5, 10-6, PS2
6.1.spi.6 identify prime and composite numbers up to 50;	1-3
6.1.spi.7 apply order of operations when computing with whole numbers (no parentheses or exponents);	1-5
6.1.spi.8 use estimation to select a reasonable solution to a computation involving whole numbers, fractions, and/or decimals;	1-1, 3-3, 3-4, 4-4b, 6-2, 7-1, 14-3
6.1.spi.9 compute efficiently and accurately with whole numbers, fractions, and decimals.	This spi is addressed throughout the text.
6.1.spi.10 connect ratios to a variety of models, real-world situations, and symbolic representations;	10-1
6.1.spi.11 select a reasonable solution to a real-world division problem in which the remainder must be considered.	4-3, 4-4, 4-4b
6.2.spi.1 extend geometric and numerical patterns.	1-1, 7-6a, 7-6
6.2.spi.2 generalize patterns in data represented in tables;	1-1, Ch 1 STP Ex. 14, 25, Ch 4 STP Ex. 9, Ch 7 STP Ex. 1, 16, 9-6, 9-7, Ch 9 STP Ex. 9, 19, 21
6.2.spi.3 apply function rules;	9-6, 9-7

STP = Standardized Test Practice, PT = Practice Test

State Performance Indicator	Student Edition Lesson(s)
6.2.spi.4 find missing addends or factors represented as variables in simple equations;	1-7, 9-2, 9-3, 9-4, 9-5
6.2.spi.5 extend rate charts to solve real-world problems;	Ch 1 STP Ex. 14, Ch 4 STP Ex. 9, 9-7
6.2.spi.6 select an equation that represents a given mathematical relationship.	9-2, 9-3, 9-4, 9-5, 9-5b, 9-6
6.2.spi.7 evaluate algebraic expressions for a given value of the variable.	1-6, 3-5, 4-1, 4-2, 4-4, 6-4, 6-5, 7-3, 7-4
6.3.spi.1 identify parallel, perpendicular, and intersecting lines;	13-1, 13-3, 13-4
6.3.spi.2 use ordered pairs to describe given points in Quadrant I of a coordinate system.	8-6
6.3.spi.3 classify two-dimensional geometric figures using properties;	13-4, 13-4b
6.3.spi.4 identify the results of transformations of two-dimensional figures (i.e., rotations/turns, flips/reflections, slides/translations);	13-5, 13-5b
6.3.spi.5 use spatial reasoning to identify the three-dimensional figure created from a two-dimensional representation (net) of that figure (i.e., cube, rectangular prism, pyramid, cone, or cylinder);	14-6a
6.3.spi.6 classify angles as acute, obtuse, right, or straight.	13-1, 13-4b
6.3.spi.7 classify quadrilaterals using their defining properties.	13-4, 13-4b
6.4.spi.1 use strategies to estimate perimeter and area of rectangles;	4-5, 6-2, 7-1
6.4.spi.2 solve real-world problems involving elapsed time.	12-6
6.4.spi.3 convert from one unit to another within the same system	12-1, 12-2, 12-5
6.4.spi.4 select units of appropriate size and type to measure angles, perimeter, area, capacity, volume, and weight;	1-8, 4-5, 12-1, 12-2, 12-4, 13-1, 13-2, 14-2, 14-5, 14-6
6.4.spi.5 apply formulas to determine the area of rectangles and triangles;	1-8, 14-1, 14-2
6.4.spi.6 use scales to read maps;	10-3
6.4.spi.7 solve real-world problems involving perimeter and area of rectangles;	1-8, 4-5, 12-1b
6.4.spi.8 determine the distance between two points on the x - or the y -axis in Quadrant I.	Ch. 8 STP Ex. 17
6.4.spi.9 solve problems involving ratios and proportions.	10-1, 10-1b, 10-2, 10-3
6.5.spi.1 determine the mode of a data set.	2-7, 2-8

State Performance Indicator	Student Edition Lesson(s)
6.5.spi.2 interpret bar and line graphs to answer questions and solve real-world problems;	2-2a, 2-2, 2-4, 2-8
6.5.spi.3 determine the mean of a data set;	2-6
6.5.spi.4 determine the median from a stem-and-leaf-plot;	Ch. 2 PT Ex. 7, 6-2b Ex. 7
6.5.spi.5 determine if a sample is biased;	11-3a
6.5.spi.6 represent the likelihood of an event using a number from 0–1.	11-1
6.5.spi.7 connect data sets and their graphical representations (i.e., bar graphs, circle, graphs, and stem-and-leaf plots);	2-2, 2-2b, 2-3, 2-5, 14-3b
6.5.spi.8 make conjectures and predictions based on data;	2-4, 2-7, 11-3, 11-4
6.5.spi.9 use a tree diagram or organized list to determine all possible outcomes of a simple compound event.	11-2

Diagnostic Test



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

1 In order to evaluate $2 + 3 \times 6 - 15 \div 5$, what should you calculate first? **1** _____

A $2 + 3$

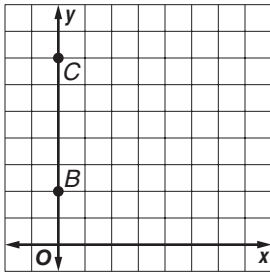
B $15 \div 5$

6.1.spi.7

C $6 - 15$

D 3×6

2 What is the distance between points B and C ? **6.4.spi.8** **2** _____



F 7

G 5

H 4

J 2

3 Craig has \$40 in his savings account, and each week he deposits \$15. **3** _____

Which equation can be used to find how many weeks it will take Craig to save \$250? **6.2.spi.6**

A $15 + 40w = 250$

B $250 + 15w = 40$

C $15 = 250 + 40w$

D $40 + 15w = 250$

4 In 2000, the population of Tennessee was 5,689,283. What digit is in the ten thousands place? **6.1.spi.1** **4** _____

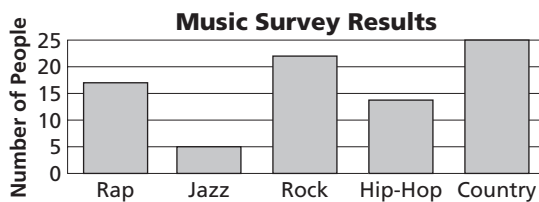
F 3

G 6

H 8

J 9

5 The bar graph shows the response of a group of people when asked their favorite type of music. How many people responded that their favorite type of music is hip-hop? **6.5.spi.2** **5** _____



A 14

B 15

C 22

D 25



Diagnostic Test (continued)



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

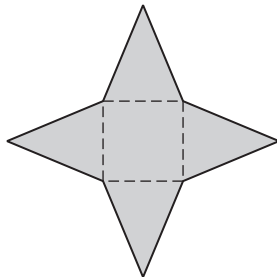
- 6** Krystal's family drove 173 miles from Nashville to Dyersburg in 2.75 hours. If they drove at the same rate from Dyersburg to Jackson and this part of the trip was 48 miles, use a proportion to determine how long it took them to drive from Dyersburg to Jackson. **6.4.spi.9** **6** _____
- F** less than an hour
G less than half an hour
H more than an hour, but less than 2 hours
J more than 2 hours

- 7** What is the relationship between how much Kim sells and her commission? **6.2.spi.2** **7** _____

Total Sales	\$50	\$60	\$70	\$80
Kim's Commission	\$3.50	\$4.20	\$4.90	\$5.60

- A** Kim earns 5% of the sale.
B Kim earns 7% of the sale.
C Kim earns 10% of the sale.
D Kim earns 35% of the sale.
- 8** Mrs. Nash wants to carpet her family room, which measures 12 feet by 14 feet. What is the area of the family room? **6.4.spi.5** **8** _____
- F** 26 ft **G** 52 ft
H 84 ft² **J** 168 ft²
- 9** Which choice would correctly use $>$? **6.1.spi.5** **9** _____
- A** 28% $\underline{\quad}$ $\frac{3}{5}$ **B** $13\frac{1}{8}$ $\underline{\quad}$ 14.27
C 16.7% $\underline{\quad}$ 17 **D** 4.3 $\underline{\quad}$ $4\frac{2}{7}$

- 10** What solid is represented by the net? **6.3.spi.5** **10** _____



- F** pyramid **G** prism
H cube **J** cone

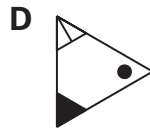
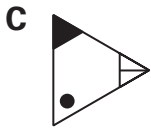
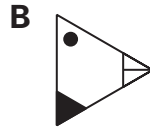
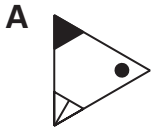
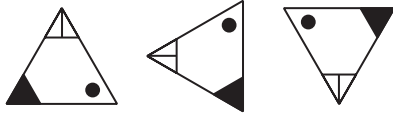


Diagnostic Test (continued)

Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

- 11 What is the next figure in the pattern? 6.2.spi.1

11 _____



- 12 Brian rolls a six-sided number cube. What is the likelihood that he rolls a 4? 6.5.spi.6

12 _____

F $\frac{1}{6}$

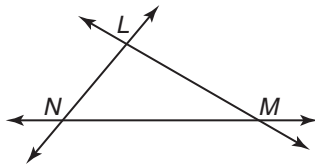
G $\frac{4}{6}$

H $\frac{2}{3}$

J $\frac{5}{6}$

- 13 How would you classify $\angle LMN$? 6.3.spi.6

13 _____



A obtuse

B straight

C acute

D right

- 14 Trent wants new curtains in his kitchen. One window is 38 inches wide and the other window is 2.5 feet wide. What is the combined width of the windows in inches? 6.4.spi.3

14 _____

F 5.6 in.

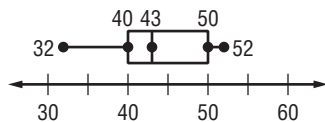
G 40 in.

H 62.5 in.

J 68 in.

- 15 What is the median of the data in the box-and-whisker plot? 6.5.spi.4

15 _____



A 40

B 43

C 50

D 52

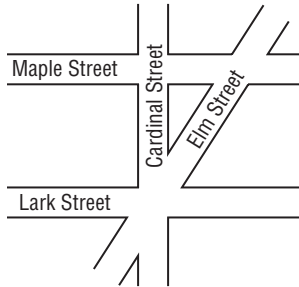


Diagnostic Test (continued)



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

Use the street map to answer Questions 22 and 23.



22 Which two streets are parallel? **6.3.spi.1** **22** _____

- F** Lark and Maple **G** Maple and Elm
H Elm and Lark **J** Cardinal and Maple

23 What two streets are perpendicular? **6.3.spi.1** **23** _____

- A** Lark and Maple **B** Maple and Elm
C Elm and Lark **D** Cardinal and Maple

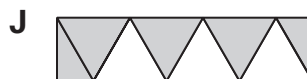
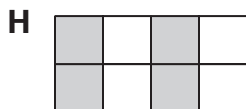
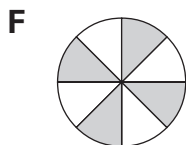
24 Separate the numbers 2, 13, 22, 23, 31, 47, and 49 into prime and composite. **6.1.spi.6** **24** _____

- F** Prime: 2, 13, 23, 31, 47 **G** Prime: 13, 23, 31, 47
 Composite: 22, 49 Composite: 2, 22, 49
H Prime: 22, 49 **J** Prime: 2, 13, 31
 Composite: 2, 13, 23, 31, 47 Composite: 23, 22, 47, 49

25 Carlisle arrived to volunteer at the food pantry near his home in Knoxville at 4:17 P.M. and left at 9:09 P.M. How much time was he at the food pantry? **6.4.spi.2** **25** _____

- A** 4 h 52 min **B** 4 h 92 min
C 5 h 22 min **D** 6 h 37 min

26 Which of the figures is equivalent to $\frac{4}{7}$? **6.1.spi.3** **26** _____



Diagnostic Test (continued)



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

- 27** Which distinguishes a square from all other types of quadrilaterals? **27** _____
6.3.spi.3
A all angles are 90°
B opposite sides are equal and parallel, and all angles are 90°
C all sides are equal
D opposite sides are parallel

Use the following information to answer Questions 28 and 29.

The scores from the last quiz in Mrs. Smith's math class were:
 10, 8, 4, 3, 4, 7, 8, 8.

- 28** What is the mode of the test scores? **6.5.spi.1** **28** _____
F 4 **G** 7
H 8 **J** 10

- 29** What is the mean score for this test? **6.5.spi.3** **29** _____
A 6.5 **B** 8
C 8.7 **D** 52

- 30** What is the solution to the equation $3t - 5 = 28$? **6.2.spi.4** **30** _____
F 7.7 **G** 11
H 69 **J** 99

- 31** Jerome was measuring the diameter of a CD. What units would he use to do this? **6.4.spi.4** **31** _____
A square feet **B** feet
C ounces **D** inches

- 32** Dr. Katz was studying a model of an eyeball. The model was 60 centimeters tall. If the model was built using the ratio 25:1, what is the average height of the eyeball represented by the model? **6.1.spi.10** **32** _____
F 375 cm **G** 30 cm
H 12.5 cm **J** 2.4 cm

- 33** What is the estimated area of Jordan's living room if the length is between $11\frac{3}{4}$ and $12\frac{1}{4}$ feet and the width is a little more than $9\frac{3}{4}$ feet? **6.4.spi.1** **33** _____
A 90 ft^2 **B** 105 ft^2
C 120 ft^2 **D** 200 ft^2

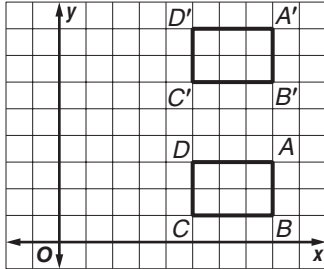


Diagnostic Test (continued)

Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

34 What type of transformation was used? **6.3.spi.4**

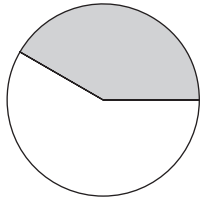
34 _____



- F** rotation
- G** reflection
- H** translation
- J** dilation

35 Tenisha cut a pizza into 12 equal pieces. If Tenisha ate the amount shaded, estimate how much of the pizza is left. **6.1.spi.8**

35 _____



- A** $\frac{5}{12}$
- B** $\frac{1}{2}$
- C** $\frac{7}{12}$
- D** $\frac{3}{4}$

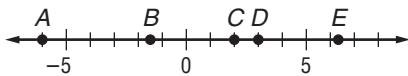
36 What type of quadrilateral has 2 sets of parallel sides, equal opposite sides, all angles 90° , and 4 sides that are not all equal? **6.3.spi.7**

36 _____

- F** parallelogram
- G** rectangle
- H** rhombus
- J** square

37 What value is represented by A ? **6.1.spi.4**

37 _____



- A** -6
- B** -5
- C** -4
- D** 6



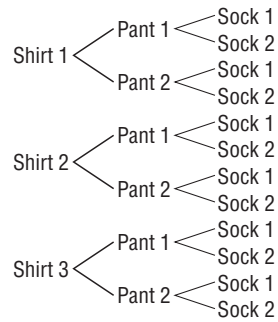
Diagnostic Test (continued)



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

42 Which scenario matches the tree diagram? **6.5.spi.9**

- F** Ronde needs to choose an outfit from 3 pairs of pants, 2 shirts and 2 pairs of socks.
- G** Ronde needs to choose an outfit from 3 shirts, 3 pairs of pants, and 2 pairs of socks.
- H** Ronde needs to choose an outfit from 3 shirts, 2 pairs of pants, and 2 pairs of socks.
- J** Ronde needs to choose an outfit from 2 shirts, 2 pairs of pants, and 2 pairs of socks.



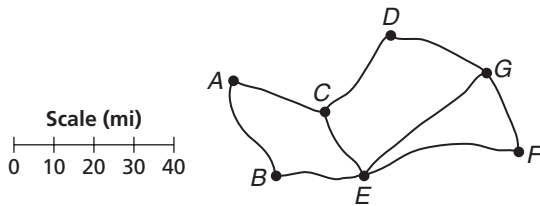
42 _____

43 A class trip to Washington D.C. is being planned for 59 students. If each hotel room sleeps 5, how many students will be in the one room with fewer than 5 students? **6.1.spi.11**

- A** 1
- B** 2
- C** 3
- D** 4

43 _____

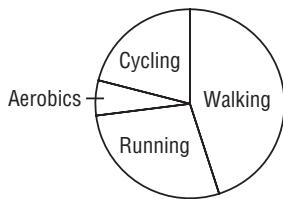
44 Using the scale on the map, how far is it from Town B to Town G if you have to travel through Town E? **6.4.spi.6**



- F** 68 mi
- G** 62 mi
- H** 55 mi
- J** 50 mi

44 _____

45 Fiona counted 100 people exercising in a city park. She made this graph. What did Fiona record? **6.5.spi.7**



- A** Running 21 Walking 6
Cycling 45 Aerobics 28
- B** Running 28 Walking 45
Cycling 21 Aerobics 6
- C** Running 6 Walking 45
Cycling 28 Aerobics 21
- D** Running 45 Walking 28
Cycling 21 Aerobics 6

45 _____



Standards Practice

Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.1.spi.3 Represent numbers using a variety of models and equivalent forms (i.e., whole numbers, mixed numbers, fractions, decimals, and percents).

1 What number is equivalent to 42%?

A $\frac{42}{10}$

B $\frac{20}{50}$

C $\frac{21}{50}$

D $\frac{21}{52}$

1 _____

2 Which pair of numbers is equivalent?

F $1\frac{1}{3}$, 130%

G 28%, $\frac{7}{25}$

H 0.38, $\frac{17}{10}$

J 1.63%, 0.163

2 _____

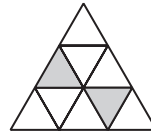
3 What number is represented by the shaded area?

A $\frac{7}{9}$

B $\frac{2}{3}$

C $\frac{1}{4}$

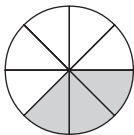
D $\frac{2}{9}$



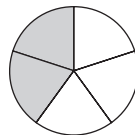
3 _____

4 Which figure is 40% shaded?

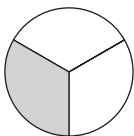
F



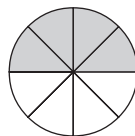
G



H



J



4 _____

5 Mateo must have $\frac{2}{3}$ of a 150 page book read by Friday. How many pages satisfy this goal?

A 120

B 100

C 90

D 75

5 _____

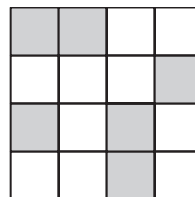
6 Carrie is painting a mural for the school. If the shaded area shows the amount she has painted, how much does she have left to paint?

F $\frac{1}{3}$

G $\frac{3}{8}$

H $\frac{5}{8}$

J $\frac{2}{3}$



6 _____

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.1.spi.5 Compare and order whole numbers, fractions, decimals, and percents using the appropriate symbol (<, >, =).

1 Which statement is correct? **1** _____

A $43\% < \frac{21}{50}$

B $\frac{31}{70} < \frac{33}{71}$

C $13\frac{2}{5} < 13.39$

D $\frac{21}{80} < 21.8\%$

2 Which symbol correctly completes $13.8\% \underline{\hspace{1cm}} 13.8$? **2** _____

F <

G >

H =

J \geq

3 Which statement is correct? **3** _____

A $8\frac{5}{7} > 870\%$

B $12.3 > 12\frac{3}{5}$

C $3\frac{5}{8} < 65.3\%$

D $0.74 > 74\%$

4 Tamyra plans to cycle 110 miles from Memphis to Union City. Carlos plans to cycle 102 miles from Cookeville to Knoxville. Which symbol shows the relationship of Carlos' trip to Tamyra's trip? **4** _____

F >

G <

H =

J \geq

5 Which symbol correctly completes $14.83 \underline{\hspace{1cm}} 14\frac{7}{9}$? **5** _____

A >

B <

C =

D \leq

6 Which symbol correctly completes $\frac{15}{4} \underline{\hspace{1cm}} 375\%$? **6** _____

F >

G <

H \leq

J =

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.1.spi.7 Apply order of operations when computing with whole numbers (no parentheses or exponents).

1 Maddie made a mistake in her homework. She got 7 when she evaluated the expression $4 + 3 \times 2 - 7$. What is the correct answer? **1** _____

A 2

B 3

C 7

D 20

2 What step should you perform first when evaluating $2 - 1 + 14 \div 7 \times 3$? **2** _____

F $14 \div 7$

G $1 + 14$

H $2 - 1$

J 7×3

3 Casey was trying to teach his sister how to evaluate $6 \cdot 3 - 4 \div 2$. Casey got the correct answer by performing which steps? **3** _____

A $18 - 4 = 14$; $14 \div 2 = 7$

B $6 \cdot 3 = 9$; $9 - 4 = 5$; $5 \div 2 = 2.5$

C $4 \div 2 = 2$; $3 - 2 = 1$; $6 \cdot 1 = 6$

D $6 \cdot 3 = 18$; $4 \div 2 = 2$; $18 - 2 = 16$

4 Evaluate $15 \div 3 + 7 \cdot 2 - 1$. **4** _____

F 23

G 18

H 12

J $\frac{15}{16}$

5 What step would you perform last when evaluating $3 \times 7 + 4 \div 2$? **5** _____

A 3×7

B $21 + 4$

C $21 + 2$

D $4 \div 2$

6 Evaluate $32 - 18 \div 3 + 4 \times 5$. **6** _____

F 46

G $24\frac{2}{3}$

H 22

J 10

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.1.spi.9 Compute efficiently and accurately with whole numbers, fractions, and decimals.

- 1 The table shows how Zorna's stock changed in the past week. How did the stock perform overall?

1 _____

Day 1	Day 2	Day 3	Day 4	Day 5
↑0.32	↓1.70	↑1.03	↓0.76	↓0.51

A ↓1.62

B ↑1.62

C ↓4.32

D ↑4.32

- 2 Connor spent \$18.58 on a CD at the music store. If he gave the cashier \$20.08, how much change should he have received?

2 _____

F \$38.66

G \$2.50

H \$1.66

J \$1.50

- 3 Laurel was making cookies and the recipe calls for $2\frac{3}{4}$ cups of flour, $\frac{3}{4}$ cup of sugar, and $\frac{1}{2}$ cup of brown sugar. What is the total amount of dry ingredients that Laurel put into the cookies?

3 _____

A $2\frac{7}{4}$ cups

B $2\frac{7}{6}$ cups

C $3\frac{3}{4}$ cups

D 4 cups

- 4 Veronica rollerbladed 0.75 mile to her friend's house, then another 0.4 mile to the library. After the library, Veronica went 0.2 mile to a sandwich shop before going 1.3 miles back home. How many miles did Veronica travel?

4 _____

F 0.05 mi

G 2.29 mi

H 2.65 mi

J 2.7 mi

- 5 Vince mows lawns for extra money. He made \$10.50, \$21, \$11.75, \$8.25, and \$17.50 last week. How much did he make mowing lawns?

5 _____

A \$69.00

B \$68.40

C \$67.50

D \$57.50

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.1.spi.10 Connect ratios to a variety of models, real-world situations, and symbolic representations.

- 1** Carl collects model cars that are $\frac{1}{12}$ the size of real cars. If one model is 10 inches long, how long is the actual car? **1** _____
- A** $\frac{5}{6}$ in. **B** 56 in.
C 95 in. **D** 120 in.
- 2** The Statue of Liberty is 46.5 meters tall. If you build a model that is 9.3 centimeters tall, what is the ratio of the model to the statue? **2** _____
- F** $\frac{1 \text{ cm}}{5 \text{ m}}$ **G** $\frac{5 \text{ m}}{1 \text{ cm}}$
H $\frac{1 \text{ cm}}{2 \text{ m}}$ **J** $\frac{2 \text{ m}}{1 \text{ cm}}$
- 3** Kayley is studying a model of a puma. The model was built with a 1:10 scale. If the average puma is 142.5 centimeters long, how long is the model? **3** _____
- A** 1.425 cm **B** 14.25 cm
C 20 cm **D** 142.5 cm
- 4** Ruby Falls, a waterfall inside Lookout Mountain, is 145 feet tall. If the Welcome Center has a model of the falls that is 5.8 feet tall, what ratio was used to build the model? **4** _____
- F** $\frac{25}{1}$ **G** $\frac{20}{1}$
H $\frac{1}{20}$ **J** $\frac{1}{25}$
- 5** Kendra is building a model volcano for a science fair project. She found that Mt. Etna in Sicily, Italy is an active volcano that is 3,350 meters tall. Kendra builds her model using the ratio 1 centimeter:125 meters. How tall is Kendra's model? **5** _____
- A** 2,680 cm **B** 134.5 cm
C 85 cm **D** 26.8 cm
- 6** Solve $\frac{2}{7} = \frac{x}{14}$. **6** _____
- F** $\frac{16}{7}$ **G** 4
H 8 **J** 49

Standards Practice

Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

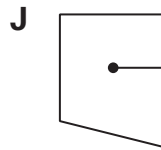
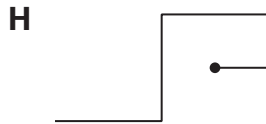
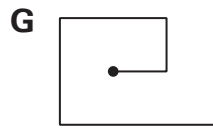
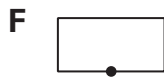
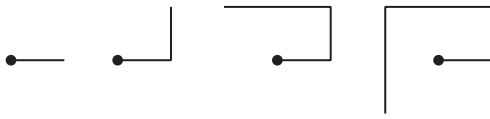
PERFORMANCE INDICATOR 6.2.spi.1 Extend geometric and numerical patterns.

- 1 The Fibonacci sequence of numbers begins with 1, 1, 2, 3, 5, and 8. Each number is the sum of the previous two numbers. What are the next three numbers in the sequence?

A 8, 9, 10 **B** 9, 10, 11 **C** 12, 17, 23 **D** 13, 21, 34

1 _____

- 2 What is the next figure in the pattern?



2 _____

- 3 What is the next number in the pattern?

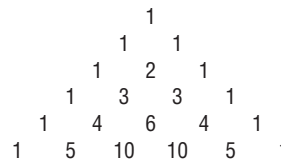
1, -4, 7, -10, 13, -16

A 6 **B** 19 **C** 21 **D** 35

3 _____

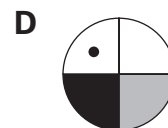
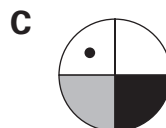
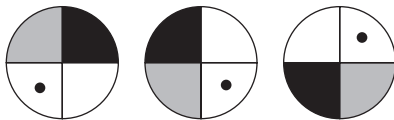
- 4 Pascal's triangle is a tree diagram whose pattern starts out as shown in the figure. If the pattern continues, what does the next row look like?

F 1, 5, 50, 100, 50, 5, 1 **G** 1, 6, 15, 15, 6, 1
H 1, 6, 15, 20, 15, 6, 1 **J** 6, 15, 20, 15, 6



4 _____

- 5 What is the next figure in the pattern?



5 _____

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.2.spi.4 Find missing addends or factors represented as variables in simple equations.

1 What is the value of m in the equation $\frac{m}{2} + 10 = 13$? **1** _____

A 6

B 7

C 10

D 24

2 Kylie is saving money to buy a new stereo. She has \$50 and plans to save \$5 more every week. Solve the equation $50 + 5w = 275$ to see how many weeks it will take Kylie to have the \$275 she needs. **2** _____

F 1,125

G 65

H 55

J 45

3 James helps out his neighbor by walking her 2 dogs every day. His neighbor pays him \$28 a week. Using the equation $28 = 7p$, where p represents the amount of money James makes every day, find how much James makes daily. **3** _____

A \$3

B \$4

C \$21

D \$28

4 What is the value of x in the equation $28 - x = 15$? **4** _____

F 43

G 33

H 23

J 13

5 What is the value of t in the equation $\frac{48}{t} = 6$? **5** _____

A 8

B 42

C 54

D 288

6 Kareem is building a model that the instructions say will take 15 hours to build. Using the equation $10h = 15$, where h is the number of hours Kareem works each day, find how many hours a day Kareem will have to work in order to finish the model in 10 days. **6** _____

F 0.5 h

G 1 h

H 1.5 h

J 2 h

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.2.spi.6 Select an equation that represents a given mathematical relationship.

- 1** Cristina is helping her mother make crafts for the school craft fair. If they sell the crafts for \$5.25, and they profit \$1.85 from each item, which equation can be used to find the cost x to make each item? **1** _____

A $5.25 + x = 1.85$

B $1.85 - x = 5.25$

C $5.25 - x = 1.85$

D $x - 1.85 = 5.25$

- 2** Jeff bought a sweater for \$23.50. If the sweater was on sale for 30% off, which equation can be used to find how much the sweater costs before the discount? **2** _____

F $0.7s = 23.50$

G $0.3s = 23.50$

H $0.3(23.50) = s$

J $0.7(23.50) = s$

- 3** Brittnie is saving money to go to Opryland. If she has \$30 and plans to save \$8 each week, which equation can be used to find how long it will take her to have \$250? **3** _____

A $250 + 8w = 30$

B $30 + 8w = 250$

C $30w + 8 = 250$

D $200 + 8w = 30$

- 4** It takes Kevin 1.5 hours to cut and arrange cold cuts on 5 deli trays. Which equation can be used to find how long h it will take him to complete one deli tray? **4** _____

F $1.5 + 5 = h$

G $1.5h = 5$

H $h + 1.5 = 5$

J $5h = 1.5$

- 5** Aimee is buying a new radio for \$75. She has \$42 and her mother is willing to give her an advance of her allowance. Which equation can be used to find how much of an advance a Aimee will need? **5** _____

A $42 + a = 75$

B $75 + a = 42$

C $42 + 75 = a$

D $42a = 75$

- 6** Zain is shopping for some video games. He has \$57 to spend. Which equation can be used to find how many games g he can buy if each game costs \$19? **6** _____

F $19g = 57$

G $57g = 19$

H $19 + g = 57$

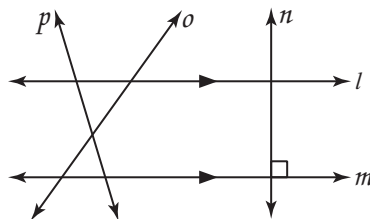
J $57 + g = 19$

Standards Practice

Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.3.spi.1 Identify parallel, perpendicular, and intersecting lines.

Use the diagram to answer Questions 1–3.



1 Which 2 lines are parallel?

- A n and l
- B l and m
- C m and n
- D n and o

1 _____

2 Which 2 lines are perpendicular?

- F o and l
- H m and n

- G l and m
- J n and o

2 _____

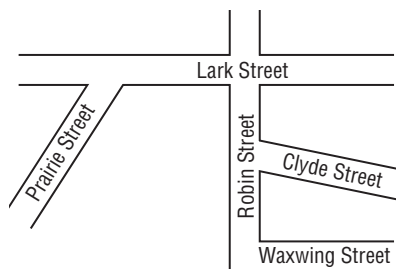
3 What lines intersects m ?

- A o and n
- C p , n , and o

- B o and l
- D n , p , and l

3 _____

Use the diagram to answer Questions 4–6.



4 What street intersects with Clyde?

- F Lark
- G Robin
- H Prairie
- J Waxwing

4 _____

5 Which 2 streets are parallel?

- A Lark and Prairie
- C Lark and Waxwing

- B Clyde and Prairie
- D Waxwing and Robin

5 _____

6 What street is perpendicular to Waxwing?

- F Clyde
- H Prairie

- G Lark
- J Robin

6 _____

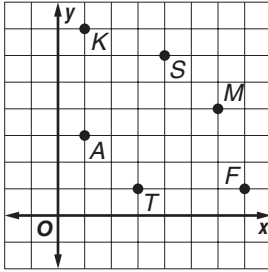
Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.3.spi.2 Use ordered pairs to describe given points in Quadrant I of a coordinate system.

Use the graph to answer Questions 1–6.



1 What are the coordinates of point *A*? **1** _____

- A** (3, 1) **B** (1, 7)
C (7, 1) **D** (1, 3)

2 What point is at (4, 6)? **2** _____

- F** *S* **G** *M*
H *A* **J** *T*

3 What are the coordinates of point *F*? **3** _____

- A** (1, 7) **B** (7, 1)
C (3, 1) **D** (1, 3)

4 What point is at (1, 7)? **4** _____

- F** *A* **G** *T*
H *K* **J** *F*

5 What are the coordinates of point *M*? **5** _____

- A** (4, 6) **B** (3, 1)
C (1, 3) **D** (6, 4)

6 What point is at (3, 1)? **6** _____

- F** *A* **G** *T*
H *K* **J** *M*

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.3.spi.3 Classify two-dimensional geometric figures using properties.

- 1 What defines a parallelogram? **1** _____
A four congruent sides
B four congruent angles
C 2 congruent sides and angles
D four side with 2 pairs of parallel sides
- 2 What type of triangle has exactly 2 sides of the same length? **2** _____
F isosceles
G scalene
H equilateral
J acute
- 3 Which plane figure is a parallelogram with exactly four congruent sides? **3** _____
A rhombus
B triangle
C rectangle
D trapezoid
- 4 What defines a regular pentagon? **4** _____
F 5 sides and 5 angles
G 6 sides and 6 angles
H 6 congruent sides and 6 congruent angles
J 5 congruent sides and 5 congruent angles
- 5 What defines an obtuse triangle? **5** _____
A one angle measure less than 90°
B one angle measure greater than 90° but less than 180°
C one right angle
D all three sides of different lengths
- 6 How would you classify a six-sided figure with all sides congruent and all angles congruent? **6** _____
F heptagon
G regular heptagon
H regular hexagon
J hexagon

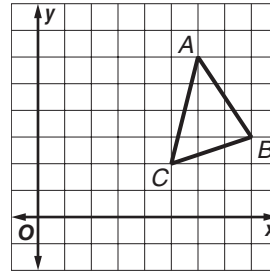
Standards Practice

Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.3.spi.4 Identify the results of transformations of two-dimensional figures (i.e., rotations/turns, flips/reflections, slides/translations).

- 1 What are the coordinates of the image of $\triangle ABC$ after a translation 3 units left and 2 units up?

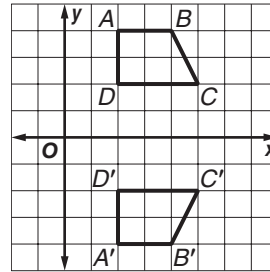
- A** $A'(9, 8), B'(11, 5), C'(8, 4)$
B $A'(9, 4), B'(11, 1), C'(8, 0)$
C $A'(3, 8), B'(5, 5), C'(2, 4)$
D $A'(3, 4), B'(6, 1), C'(2, 0)$



1 _____

- 2 What type of transformation moves $ABCD$ to $A'B'C'D'$?

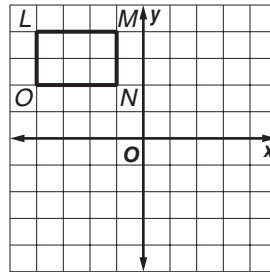
- F** reflection
G rotation
H translation
J slide



2 _____

- 3 What are the coordinates of the image of $LMNO$ after a rotation of 180° about the origin?

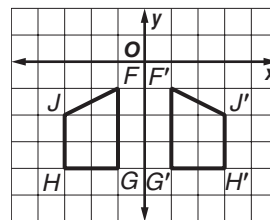
- A** $L'(-4, 4), M'(-1, 4), N'(-1, 2), O'(-4, 2)$
B $L'(4, -4), M'(1, -4), N'(1, -2), O'(4, -2)$
C $L'(-4, 4), M'(-4, 1), N'(-2, 1), O'(-2, 4)$
D $L'(4, -4), M'(4, -1), N'(2, -1), O'(2, -4)$



3 _____

- 4 What type of transformation moves $FGHJ$ to $F'G'H'J'$?

- F** reflection
G rotation
H translation
J turn



4 _____

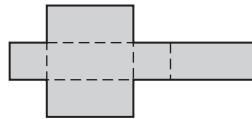
Standards Practice

Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.3.spi.5 Use spatial reasoning to identify the three-dimensional figure created from a two-dimensional representation (net) of that figure (i.e., cube, rectangular prism, pyramid, cone, or cylinder).

1 What solid can be created from the net?

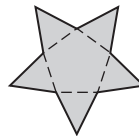
- A rectangular prism
- B cube
- C rectangular pyramid
- D cone



1 _____

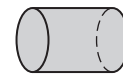
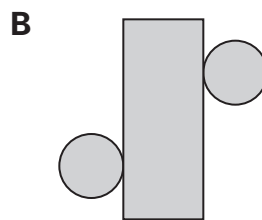
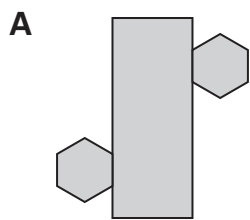
2 What solid can be created from the net?

- F pentagonal prism
- G pentagonal pyramid
- H cube
- J cylinder

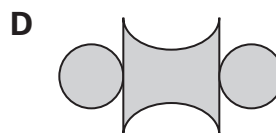
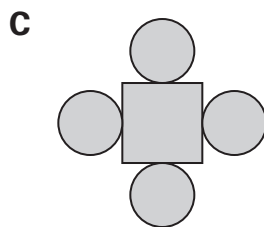


2 _____

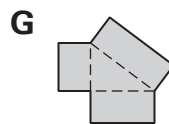
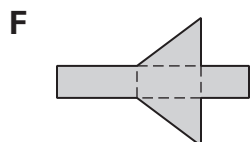
3 Which net corresponds to the solid at the right?



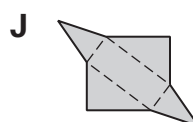
3 _____



4 Which net corresponds to the solid at the right?



4 _____

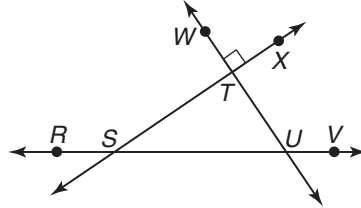


Standards Practice

Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.3.spi.6 Classify angles as acute, obtuse, right, or straight.

Use the figure to answer Questions 1–5.



1 Classify $\angle TUV$.

- A acute
- B right
- C straight
- D obtuse

1 _____

2 Which angle is acute?

- F $\angle SUV$
- H $\angle RST$
- G $\angle XTW$
- J $\angle UST$

2 _____

3 Which angle is a right angle?

- A $\angle TSU$
- C $\angle STU$
- B $\angle TUV$
- D $\angle WUS$

3 _____

4 Classify $\angle STX$.

- F right
- H acute
- G straight
- J obtuse

4 _____

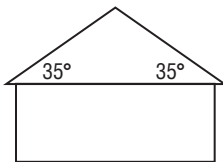
5 Which angle is obtuse?

- A $\angle SUV$
- C $\angle VUS$
- B $\angle XTU$
- D $\angle TSR$

5 _____

6 What type of angle is formed at the peak of the house?

6 _____



- F acute
- H obtuse
- G right
- J straight

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.3.spi.7 Classify quadrilaterals using their defining properties.

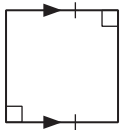
1 What type of quadrilateral has 4 congruent sides and 2 pairs of congruent opposite angles? **1** _____

- A** rhombus **B** rectangle
C pentagon **D** trapezoid

2 What type of quadrilateral has only one pair of sides parallel? **2** _____

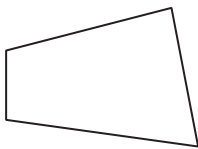
- F** rhombus **G** rectangle
H square **J** trapezoid

3 In order for the figure to be classified as a square, what additional information must be labeled? **3** _____



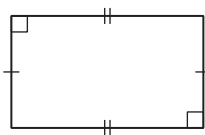
- A** 2 angles labeled right
B everything needed is already labeled
C second set of sides labeled parallel
D second set of sides labeled congruent to the given sides

4 Classify the figure. **4** _____



- F** parallelogram **G** square
H quadrilateral **J** trapezoid

5 Classify the figure. **5** _____



- A** parallelogram **B** rectangle
C square **D** trapezoid

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.4.spi.1 Use strategies to estimate perimeter and area of rectangles.

- 1** Estimate the area of Shaq's family room if the length of the room is a little more than 10 feet and the width of the room is between $12\frac{3}{4}$ and $13\frac{1}{4}$ feet. **1** _____
- A** 132 ft^2 **B** 125 ft^2
C 120 ft^2 **D** 110 ft^2
- 2** Estimate the area of Karissa's garden if the length is between $8\frac{1}{4}$ feet and $8\frac{3}{4}$ feet and the width is a little less than $5\frac{1}{2}$ feet. **2** _____
- F** 33 ft^2 **G** 35 ft^2
H 38 ft^2 **J** 45 ft^2
- 3** An architect is trying to determine the area of a model of a motor home. **3** _____
The model is a little more than $15\frac{1}{3}$ inches long, and it is between $5\frac{1}{4}$ inches and $6\frac{3}{4}$ inches wide. Estimate the area of the model.
- A** 70 in^2 **B** 75 in^2
C 95 in^2 **D** 110 in^2
- 4** On a map, Memphis is a rectangle a little more than $2\frac{1}{2}$ centimeters wide and it is between $1\frac{3}{4}$ centimeters and $2\frac{1}{4}$ centimeters long. Estimate the perimeter of Memphis on the map. **4** _____
- F** 4 cm **G** 6 cm
H 8 cm **J** 10 cm
- 5** Jackson is helping his dad lay sod in their yard. If the yard is between $17\frac{3}{4}$ feet and $18\frac{1}{4}$ feet long and a little less than $41\frac{1}{2}$ feet wide, estimate the area of the yard. **5** _____
- A** 120 ft^2 **B** 500 ft^2
C 600 ft^2 **D** 740 ft^2
- 6** Justine is painting a border on her bedroom wall. If her room is a little more than $10\frac{1}{2}$ feet wide and is between $12\frac{1}{4}$ and $13\frac{3}{4}$ feet long, Estimate the length of the border. **6** _____
- F** 48 ft **G** 55 ft
H 130 ft **J** 140 ft

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.4.spi.2 Solve real-world problems involving elapsed time.

- 1 Javier got to his job at 4:28 P.M. How much time was he at work if he left at 8:05 P.M.? **1** _____

A 3 h 7 min
B 3 h 37 min
C 3 h 77 min
D 4 h 07 min

- 2 Alex was trying to keep track of the time he spent working on his homework. The table shows his work for the past week. How much time did he spend on his homework? **2** _____

Day	Mon.	Tues.	Wed.	Thurs.	Fri.
Start Time	3:21	NO	6:35	3:30	NO
End Time	4:15	WORK	7:48	4:15	WORK

F 3 h 0 min
G 2 h 58 min
H 2 h 52 min
J 2 h 45 min

- 3 Eliese was trying not to watch more than 5 hours of television each week. On Monday, she watched television from 7:30 P.M. until 8:15 P.M. She watched television on Wednesday from 7:05 P.M. until 8:55 P.M. On Thursday, she watched television from 6:35 P.M. until 7:30 P.M. On Saturday, she watched television from 9:30 A.M. until 11:00 A.M. Which statement describes how Eliese did in working towards her goal? **3** _____

A She was under her goal by 30 min.
B She was under her goal by 1 h 15 min.
C She watched exactly 5 hours of television.
D She was over her goal by 30 min.

- 4 Malina volunteered to help plant trees in the Fall Creek Falls State Park. She planted trees from 8:15 A.M. until 11:30 A.M., ate lunch, and then planted more trees from 12:20 P.M. until 2:45 P.M. How much time did she spend planting trees? **4** _____

A 5 h 40 min
B 6 h 30 min
C 12 h 90 min
D 13 h 30 min

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.4.spi.3 Convert from one unit to another within the same system.

- 1** Coleman was building a model car. The model car measures 2.75 feet. How long is the model in inches? **1** _____
A 11 in. **B** 18.25 in.
C 24.75 in. **D** 33 in.
- 2** The distance from Olivehill to Lawrenceburg is 72.43 kilometers. How far is that in meters? **2** _____
F 0.7243 m **G** 724.3 m
H 7,243 m **J** 72,430 m
- 3** Moira is making curtains for her bedroom. One window is 38 inches wide and the other window is 4.5 feet wide. What is the combined width of the windows in inches? **3** _____
A 92 in. **B** 83 in.
C 42.5 in. **D** 7.7 in.
- 4** Miguel is running a 5-kilometer race on Saturday. Next week he is planning on running 3,280 meters in additional training. What is the total distance that Miguel will run in kilometers? **4** _____
F 3.78 km **G** 8.28 km
H 3,780 km **J** 8,280 km
- 5** Kayla bicycles 1.5 miles to the library. From here, she bicycles 1,320 feet to her friend's house. How far does she travel in miles? **5** _____
A 2 mi **B** 1.75 mi
C 1.5 mi **D** 1.25 mi
- 6** Julian is baking some brownies. He mixes 4 cups of flour and 6 ounces of sugar together before adding the chocolate. How many ounces of flour and sugar is he using? **6** _____
F 18 oz **G** 30 oz
H 38 oz **J** 46 oz

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.4.spi.4 Select units of appropriate size and type to measure angles, perimeter, area, capacity, volume, and weight.

1 Marcus is building a model airplane and needs to make sure that both wings are attached to the plane at the same angle. What units are used to measure this? **1** _____

A degrees

B feet

C inches

D ounces

2 When measuring a kitchen to lay down new flooring, what units are used to calculate the amount of flooring needed? **2** _____

F square feet

G square inches

H feet

J inches

3 Janine is measuring fabric to sew a skirt. What units would she use? **3** _____

A kilometers

B millimeters

C yards

D gallons

4 Ian is trying to measure the weight of his bowling ball. What units would he use? **4** _____

F square feet

G meters

H liters

J pounds

5 What units would Gabrielle use to determine how much liquid a saucepan would hold? **5** _____

A pounds

B liters

C degrees

D meters

6 Caprice is planting flowers to sell at a craft show. She needs to know how much soil to buy to fill 100 large flowerpots. What units will she use in her calculations? **6** _____

F inches

G square centimeters

H ounces

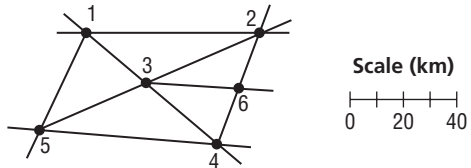
J cubic feet

Standards Practice

Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.4.spi.6 Use scales to read maps.

Use the scale on the street map to answer Questions 1–3.



1 About how far is it from intersection 1 to intersection 6 if you travel through intersection 3? **1** _____

- A** 85 km **B** 75 km
C 65 km **D** 55 km

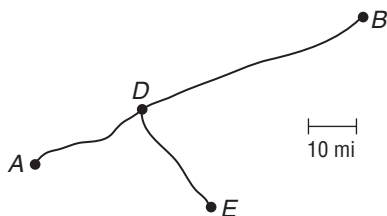
2 About how far is it from intersection 2 to intersection 5 if you travel through intersection 3? **2** _____

- F** 80 km **G** 90 km
H 100 km **J** 110 km

3 Which trip has the greatest distance? **3** _____

- A** intersection 1 to 2 **B** intersection 2 to 3
C intersection 3 to 6 **D** intersection 4 to 5

Use the scale on the map to answer Questions 4 and 5.



4 About how far is it from town A to town B? **4** _____

- F** 65 mi **G** 70 mi
H 75 mi **J** 80 mi

5 About how far is it from town E to town B if you travel through town D? **5** _____

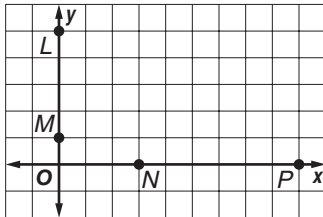
- A** 85 mi **B** 75 mi
C 65 mi **D** 55 mi

Standards Practice

Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.4.spi.8 Determine the distance between two points on the x - or the y -axis in Quadrant I.

Use the graph to answer Questions 1 and 2.



1 What is the distance between points N and P ?

- A** 12 **B** 9
C 6 **D** 4

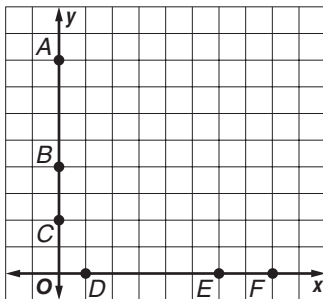
1 _____

2 What is the distance between points M and L ?

- F** 1 **G** 4
H 5 **J** 6

2 _____

Use the graph to answer Questions 3–5.



3 What is the distance between points A and C ?

- A** 8 **B** 6
C 4 **D** 2

3 _____

4 What is the distance between points E and D ?

- F** 6 **G** 5
H 4 **J** 1

4 _____

5 What is the distance between points D and F ?

- A** 2 **B** 5 **C** 7 **D** 8

5 _____

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.4.spi.9 Solve problems involving ratios and proportions.

- 1** Neal is baking bread and he wants to make $\frac{1}{4}$ of the recipe. If the recipe calls for 5 pounds of flour, which proportion can be used to find how much flour to use? **1** _____

A $\frac{x}{5} = \frac{1}{4}$

B $\frac{x}{4} = \frac{5}{1}$

C $\frac{4}{x} = \frac{1}{5}$

D $x = \frac{4}{5}$

- 2** Julio is building a model boat, but the directions use the metric system and all his tools are in standard units. Which proportion will he use to convert 18 inches into centimeters if 1 inch is approximately 2.54 centimeters? **2** _____

F $\frac{18}{1} = \frac{2.54}{x}$

G $\frac{18}{x} = \frac{15.46}{2.54}$

H $\frac{1}{18} = \frac{x}{2.54}$

J $\frac{18}{1} = \frac{x}{2.54}$

- 3** Madelyn's family drove 250 kilometers from Jackson to Gallatin in 3 hours. If they drove at the same rate from Gallatin to La Follette in 4 hours, which proportion shows how to find the distance from Gallatin to La Follette? **3** _____

A $\frac{250}{4} = \frac{3}{d}$

B $\frac{3}{250} = \frac{d}{4}$

C $\frac{250}{d} = \frac{4}{3}$

D $\frac{250}{3} = \frac{d}{4}$

- 4** What value solves the ratio $\frac{8}{32} = \frac{r}{16}$? **4** _____
- F** 2 **G** 4 **H** 5 **J** 6

Use the following information to answer Questions 5 and 6.

Eugenia is trying to figure out what the ratio of students to teachers is at her school. The table shows the beginning of her work.

Students	90	150	210
Teachers	3	5	7

- 5** What ratio relates the number of students to teachers? **5** _____
- A** 1:30 **B** 15:5 **C** 3:21 **D** 30:1

- 6** How many teachers would there be for 300 students? **6** _____
- F** 10 **G** 30 **H** 50 **J** 90

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.5.spi.3 Determine the mean of a data set.

- 1 What is the mean of the data set 5, 3, 10, 8, 9? **1** _____
- A** 6 **B** 7
C 8 **D** 9

- 2 Joyce ran 1.8 miles, 4.7 miles, 3 miles, 3.1 miles, and 2.4 miles in training. What is the mean distance she ran? **2** _____
- F** 4 **G** 3
H 2.5 **J** 2

- 3 Wesley scored 13, 10, 17, 15, and 12 on his last 5 quizzes. What was his mean score? **3** _____
- A** 14 **B** 13.7
C 13.4 **D** 13

- 4 The average monthly high temperatures in Knoxville for June through October are 85°F, 87°F, 87°F, 81°F, and 71°F. What is the mean average high temperature for these months? **4** _____
- F** 80.2°F **G** 82.2°F
H 84.2°F **J** 86.2°F

- 5 Ricky has run in 4 marathons and has completed the races in 3 hours 40 minutes, 3 hours 35 minutes, 3 hours 50 minutes, and 3 hours 43 minutes. What was his mean time? **5** _____
- A** 3 h 55 min **B** 3 h 47 min
C 3 h 45 min **D** 3 h 42 min

- 6 What is the mean of the data set 12, 8, 13, 7, 10, 5, 15, 10? **6** _____
- F** 15 **G** 12
H 10 **J** 8

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.5.spi.4 Determine the median from a stem-and-leaf plot.

1 What is the median of the set of data?

1 _____

Stem	Leaf
0	7
1	0 1 2
2	3 5
3	2 8
4	1 2 3
5	0 0 1
1 2 = 12	

A 32

B 34

C 35

D 37

2 The stem-and-leaf plot shows Emily's test scores in her math class this year. What is her median test score?

2 _____

Stem	Leaf
5	2
6	3 9
7	1 5 5 8
8	2 4 7
9	1 2 2 5
10	0
5 2 = 52	

F 84

G 83

H 82

J 78

3 Dontrell plans on running in the Race on the Trace, a 5-mile race through Natchez Trace State Park. The stem-and-leaf plot shows his times in previous 5-mile races. What is Dontrell's median race time?

3 _____

Stem	Leaf
3	7 9
4	2 5 7 7 9 9
5	0 2
3 7 = 37 min	

A 49 min

B 48 min

C 47 min

D 45 min

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.5.spi.5 Determine if a sample is biased.

- 1 Kyle is at the Old Stone Fort State Park and is taking a survey to see what Tennessee residents think of the access fee to the park. What statement describes whether or not this sample is biased? **1** _____
- A** The sample is biased because it contains only people at the state park.
 - B** The sample is biased because it contains only people who are outdoor minded.
 - C** The sample is biased because it contains only people who are environmentally conscious.
 - D** The sample is unbiased.
- 2 Monique is surveying people at the mall to determine the most popular television show. Which statement best describes whether or not this sample is biased? **2** _____
- F** The sample is unbiased.
 - G** The sample is biased because she is surveying only people at the mall.
 - H** The sample is biased because she does not know if the people even watch television.
 - J** The sample is biased because she is interested in only their favorite show.
- 3 Trevor is outside a local car dealership taking a survey on the most popular car. He is asking everyone who enters what make of car is their favorite. Which statement best describes whether or not this sample is biased? **3** _____
- A** The sample is unbiased.
 - B** The sample is biased because he asks only people who own cars.
 - C** The sample is biased because he is asking people as they enter the dealership.
 - D** The sample is biased because he is asking people at only one car dealership.

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.5.spi.6 Represent the likelihood of an event using a number from 0 to 1.

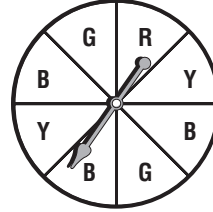
- 1** What is the probability that the spinner lands on blue (B) when you spin the spinner?

A $\frac{1}{4}$

B $\frac{3}{8}$

C $\frac{5}{8}$

D $\frac{3}{4}$



1 _____

- 2** What is the probability that you roll a 5 with a six-sided number cube?

F $\frac{5}{6}$

G $\frac{2}{3}$

H $\frac{1}{2}$

J $\frac{1}{6}$

2 _____

- 3** Jesse has visited 12 of the 53 state parks in Tennessee. What is the probability that Jesse has visited Pinson Mounds State Park?

A $\frac{1}{53}$

B $\frac{1}{12}$

C $\frac{12}{53}$

D $\frac{11}{12}$

3 _____

- 4** At the school fun fair, you pick a marble out of a bag at random. If there are 7 winning marbles in the bag, what is the probability that you pull a winner if there are 54 total marbles in the bag?

F $\frac{54}{61}$

G $\frac{47}{54}$

H $\frac{7}{54}$

J $\frac{7}{61}$

4 _____

- 5** The numbers 1 through 15 are written on pieces of paper and placed in a hat. What is the probability that Tyler randomly chooses an even number?

A $\frac{2}{15}$

B $\frac{4}{15}$

C $\frac{7}{15}$

D $\frac{8}{15}$

5 _____

- 6** On a trip to Norris Dam State Park, Carter brings 5 CDs. Each CD is a different type of music: hip-hop, rap, country, jazz, and rock. What is the probability that he chooses the country CD to listen to first when he picks a CD at random?

F $\frac{4}{5}$

G $\frac{3}{4}$

H $\frac{1}{4}$

J $\frac{1}{5}$

6 _____

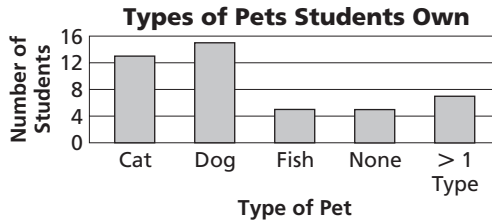
Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.5.spi.7 Connect data sets and their graphical representations (i.e., bar graphs, circle graphs, and stem-and-leaf plots).

1 Myles surveyed 45 students at school to see what type of pet they have at home. He made this graph. What did Myles record?



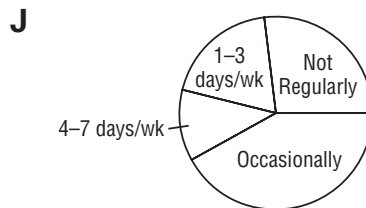
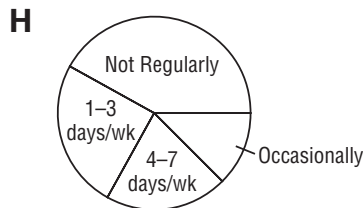
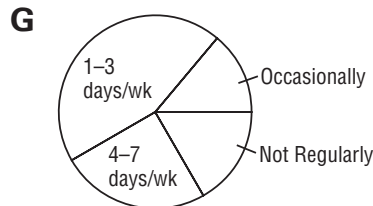
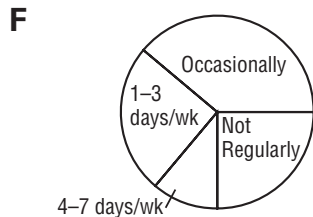
1 _____

- A Cat: 12, Dog: 16, Fish: 5, None: 5, More Than 1 Type: 8
- B Cat: 16, Dog: 14, Fish: 5, None: 8, More Than 1 Type: 5
- C Cat: 15, Dog: 13, Fish: 4, None: 6, More Than 1 Type: 8
- D Cat: 13, Dog: 15, Fish: 5, None: 5, More Than 1 Type: 7

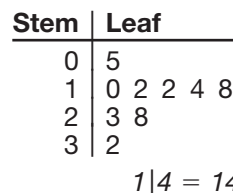
2 Sheila was at the Shelbyville Fall Food Festival and surveyed 100 people. She asked them about their exercise habits. She recorded the results in a table. Which graph represents this data?

How Often People Exercise	Number Who Responded
Not regularly	27
1-3 days a week	19
4-7 days a week	12
Occasionally	42

2 _____



3 Which set of data was used to construct this stem-and-leaf plot?



3 _____

- A 12, 18, 32, 28, 5, 10, 14, 12, 23
- B 50, 1, 21, 21, 41, 48, 32, 38, 23
- C 5, 0, 2, 2, 4, 8, 3, 8, 2
- D 50, 10, 12, 12, 18, 23

Standards Practice



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

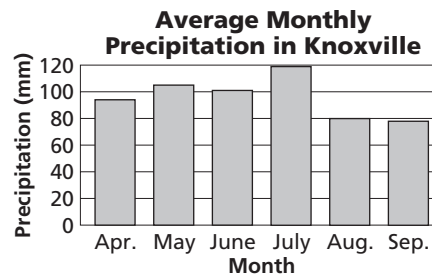
PERFORMANCE INDICATOR 6.5.spi.8 Make conjectures and predictions based on data.

- 1 Mariah has been trying to raise her grade in English. Her scores are 58, 42, 50, 55, 57, 61, 65, and 73. If the trend continues, what will she score on the next test?

1 _____

- A** She will earn a score less than 60.
B She will earn a score slightly less than 73.
C She will earn a score of about 73.
D She will earn a score of about 80.

- 2 The graph shows the average monthly precipitation for Knoxville. Based on the data, which statement is a reasonable prediction for October's precipitation?



2 _____

- F** The amount of precipitation will drop slightly.
G The amount of precipitation will increase slightly.
H The amount of precipitation will remain constant.
J The amount of precipitation will increase a great amount.

- 3 The table shows the statistics for several players on a Tennessee minor league baseball team. What conjecture can you make from this information?

3 _____

Player	Batting Average	Games	At Bats	Hits
Bolivar	0.278	133	474	132
Boyd	0.273	27	88	24
Burns	0.287	87	272	78
Cosme	0.273	132	495	135

- A** The greater number of games played corresponds to a greater batting average.
B The greater number of at bats corresponds to a greater batting average.
C The batting averages of the players are very close even though the other data are not showing any specific trend.
D The greater number of hits corresponds to smaller batting average.

Standards Practice

Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 6.5.spi.9 Use a tree diagram or organized list to determine all possible outcomes of a simple compound event.

- 1** Jack orders lunch from a deli. He knows he wants a ham and cheese sandwich, but he can choose white or wheat bread and american or swiss cheese. Which tree diagram shows the number of possible sandwiches he can choose?

1 _____

- A**
- ```

White <-- Swiss
 <-- Ham
Wheat <-- American
 <-- Ham

```
- B**
- ```

Ham <-- Wheat --- Swiss
     <-- White --- American
  
```
- C**
- ```

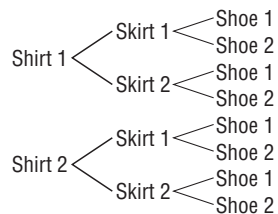
Ham <-- American --- Wheat
 <-- Swiss --- White

```
- D**
- ```

Ham <-- White <-- American
     <-- White <-- Swiss
     <-- Wheat <-- American
     <-- Wheat <-- Swiss
  
```

- 2** What scenario matches the tree diagram?

2 _____



- F** Katerina chooses 1 shirt from 2, 1 skirt from 2, and 1 pair of shoes from 2.
- G** Katerina chooses 1 shirt from 4, 1 skirt from 2, and 1 pair of shoes from 2.
- H** Katerina chooses 1 shirt, 1 skirt and 1 pair of shoes from 3 of each.
- J** Katerina chooses 1 pair of shoes from 3, 1 skirt from 2 and 1 shirt from 3.

Sample Test

Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

- 1** Cherise is making paper flowers to decorate the gym for the spring dance. If she works at a constant rate, how long will it take her to make 100 flowers? **1** _____

Number of Minutes	20	60	76
Number of Flowers	5	15	19

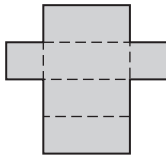
- A** 4 min
B 25 min
C 140 min
D 400 min
- 2** You pick a marble at random from a bag that contains 5 red, 3 blue, 1 yellow, 7 green, and 8 swirled marbles. What is the probability that you choose a green marble? **2** _____

- F** $\frac{7}{24}$ **G** $\frac{1}{7}$
H $\frac{8}{27}$ **J** $\frac{7}{8}$

- 3** The attendance for the 2003 season of the Tennessee Smokies baseball team was 256,597 people. What digit is in the thousands position? **3** _____

- A** 9 **B** 6
C 5 **D** 2

- 4** What solid is represented by the net? **4** _____



- F** cube
G cylinder
H rectangular pyramid
J rectangular prism

- 5** Vivian is hanging a wallpaper border in her office. If her office measures 10 feet by 14 feet, how much border will she hang? **5** _____

- A** 140 ft
B 70 ft
C 48 ft
D 24 ft



Sample Test (continued)



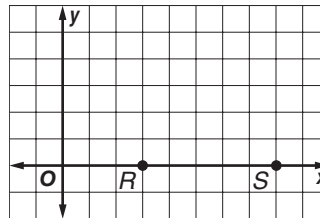
Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

11 What is the value of the function $f(x) = 6x - 8$ when $x = 5$? **11** _____

- A** 3
- B** 18
- C** 22
- D** 57

12 What is the distance between points R and S ?

- F** 11
- G** 8
- H** 5
- J** 4



12 _____

13 Students at the University of Tennessee library were asked what is their favorite type of book. Which statement describes whether or not the sample of UT students is biased?

- A** The sample is fine.
- B** The sample is biased because only smart students were surveyed.
- C** The sample is biased because only book loving students were surveyed.
- D** The sample is biased because only students at the library were surveyed.

13 _____

14 What is the next number in the pattern 3, -7 , 5, -9 , 7, -11 , 9?

- F** -9
- G** -11
- H** -13
- J** -22

14 _____

15 How would you classify an eight-sided figure with 8 congruent sides and 8 congruent angles?

- A** octagon
- B** regular octagon
- C** hexagon
- D** regular hexagon

15 _____

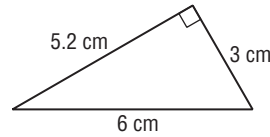


Sample Test (continued)

Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

16 What is the area of the triangle?

- F 18 cm^2 G 15.6 cm^2
 H 9 cm^2 J 7.8 cm^2



16 _____

17 Randy delivers flowers and gets paid based on how many deliveries he makes. The table shows his pay for the past 3 weeks and the number of deliveries he made. How much does Randy make for each delivery?

Number of Deliveries	20	37	12
Weekly Pay	\$75.00	\$138.75	\$45.00

- A \$150.00 B \$54.00
 C \$37.50 D \$3.75

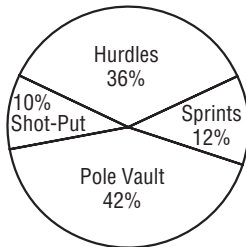
17 _____

18 Which symbol correctly completes 13.3 _____ $13\frac{2}{3}$?

- F $<$ G $>$
 H \geq J $=$

18 _____

19 Luis surveyed 50 people at the track meet and asked them what event is their favorite. He made this circle graph. What did Luis record?



- A Hurdles 18, Sprints 6, Shot-put 5, Pole Vault 21
 B Hurdles 21, Sprints 5, Shot-put 6, Pole Vault 18
 C Hurdles 5, Sprints 21, Shot-put 18, Pole Vault 6
 D Hurdles 6, Sprints 18, Shot-put 21, Pole Vault 5

19 _____

20 What is the value of $4a - 3 + 5b$ when $a = 6$ and $b = 3$?

- F 6
 G 36
 H 42
 J 96

20 _____



Sample Test (continued)

Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

- 26** Chun volunteers at the animal shelter by feeding and playing with the dogs. If Chun got to the shelter at 11:35 A.M. and left at 4:15 P.M., how long was he at the animal shelter? **26** _____

F 4 h 20 min **G** 4 h 40 min
H 7 h 20 min **J** 7 h 40 min

- 27** The Tennessee Smokies baseball team had 45, 16, 56, 101, and 160 hits off their left-handed pitchers in the 2003 season. What is the mean of this data? **27** _____

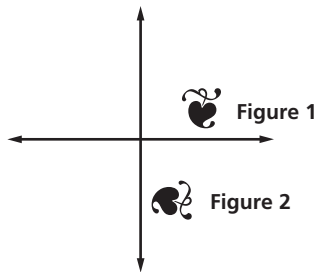
A 88 **B** 78.5
C 75.6 **D** 57.5

- 28** Knute has to pick his number for his basketball uniform. The numbers 13, 17, 23, 32, 37, and 41 are available. He wants a composite number, so which number does he choose? **28** _____

F 41 **G** 37
H 32 **J** 23

- 29** What transformation moves Figure 1 to Figure 2? **29** _____

A reflection
B rotation
C translation
D flip



- 30** Which set of data has a mode of 3? **30** _____

F 0, 3, 8, 9, 3, 0, 1, 0
G 3, 7, 5, 3, 5, 1, 5, 7
H 2, 3, 5, 2, 4, 3, 2, 4
J 4, 3, 6, 4, 3, 8, 3, 2

- 31** What is the estimated perimeter of Dwaun's rectangular ranch if it is a little less than 5 miles long and between $6\frac{3}{4}$ and $7\frac{1}{4}$ miles wide? **31** _____

A 23.5 mi **B** 24 mi
C 24.5 mi **D** 35 mi

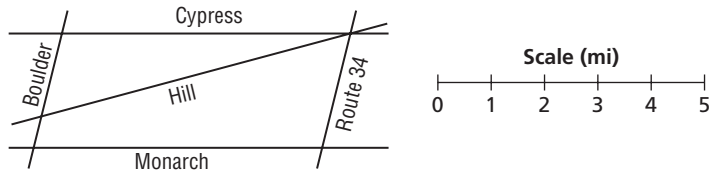


Sample Test (continued)



Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

- 36** Using the scale on the street map, how far is it from the intersection of Cypress and Route 34 to the intersection of Monarch and Boulder if you travel along Hill? **36** _____



- F** $7\frac{1}{2}$ mi **G** 7 mi
H $6\frac{1}{2}$ mi **J** 6 mi
- 37** Bill wants to play golf at all 8 courses on the Tennessee Golf Trail. The green fees are between \$14.25 and \$21.25 per course. Estimate what Bill can expect to pay for his 8 games of golf. **37** _____
- A** \$110 **B** \$150
C \$170 **D** \$200
- 38** What value correctly solves the ratio $\frac{2}{m} = \frac{6}{21}$? **38** _____
- F** 7 **G** 13
H 36 **J** 63
- 39** An architectural model of the Nashville City Center is 20 inches tall. If the actual building is 400 feet tall, what ratio was used to construct the model? **39** _____
- A** 1 ft : 40 ft **B** 1 in. : 20 ft
C 1 in. : 40 ft **D** 1 in. : 2 ft
- 40** Jaycen is saving money to buy an authentic football jersey of his favorite player. He has \$50 and plans to save \$15 each week. Which equation can be used to find how long it will take him to save the \$210 he needs for the jersey? **40** _____
- F** $50w + 15 = 210$ **G** $15w + 50 = 210$
H $210 + 15w = 50$ **J** $210 + 50 = 15w$
- 41** Ariana is putting pictures of her trip to Lake Winnepesaukah Amusement Park in Rossville in a photo album. She puts 4 photos on each page. If Ariana has 63 pictures, how many pictures will be on the last page? **41** _____
- A** 15 **B** 4
C 3 **D** 1

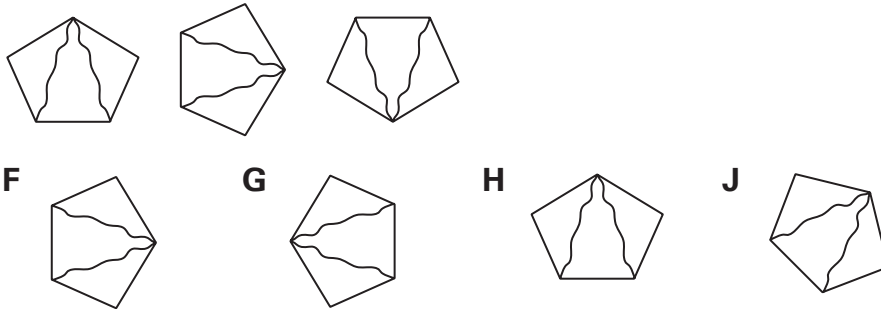


Sample Test (continued)

Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

42 What does the next figure in the pattern look like?

42 _____



43 Hunter's family is going to stay for d days in the Hollow Cabin at Cumberland Mountain. If the equation $65d = 195$ models the rental cost, how many days will the family stay if the bill is \$195?

43 _____

- A** 7
C 4

- B** 5
D 3

44 Dale drives race cars for a hobby. The stem-and-leaf plot shows the time he has spent in a race car this year. What is the median number of minutes that he has spent in a race car?

44 _____

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

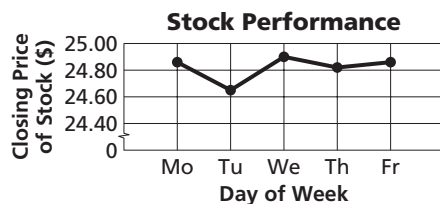
$5|3 = 53$

- F** 75 min
H 73 min

- G** 74 min
J 72 min

45 The line graph shows the performance of a stock over one week. What was the overall performance of this stock?

45 _____



- A** No change
C Gained \$1.00

- B** Gained \$0.10
D Gained \$10.00

