

**GLNCOE
MATHMATICS**

Grade 7

Tennessee Comprehensive Assessment Program (TCAP)

Practice and Sample Test Workbook

Includes:

- Tennessee Mathematics Curriculum Standards, Grade 7, Correlated to *Glencoe Mathematics: Applications and Concepts, Course 2*
- 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 7
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 7, Correlated to *Glencoe Mathematics: Applications and Concepts, Course 2*,
- 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 58 to 67.

Student Recording Chart

Directions Mark an \times by each question from the Diagnostic Test that you answered *incorrectly*. If there are one or two \times 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	7.1.spi.1	7.1.spi.2	7.1.spi.3	7.1.spi.4	7.1.spi.5	7.1.spi.6	7.1.spi.7
Test Questions	14 <input type="checkbox"/>	8 <input type="checkbox"/>	17 <input type="checkbox"/>	33 <input type="checkbox"/>	48 <input type="checkbox"/>	36 <input type="checkbox"/>	29 <input type="checkbox"/>
Need Practice?							
Practice Pages	11	12	13	14	15	16	17

SPI	7.1.spi.8	7.1.spi.9	7.1.spi.10	7.1.spi.11	7.1.spi.12	7.2.spi.1	7.2.spi.2
Test Questions	42 <input type="checkbox"/>	27 <input type="checkbox"/>	20 <input type="checkbox"/>	23 <input type="checkbox"/>	1 <input type="checkbox"/>	3 <input type="checkbox"/>	50 <input type="checkbox"/>
Need Practice?							
Practice Pages	18	19	20	21	22	23	24

SPI	7.2.spi.3	7.2.spi.4	7.2.spi.5	7.2.spi.6	7.2.spi.7	7.2.spi.8	7.2.spi.9
Test Questions	9 <input type="checkbox"/> 16 <input type="checkbox"/>	10 <input type="checkbox"/>	15 <input type="checkbox"/>	30 <input type="checkbox"/>	40 <input type="checkbox"/>	44 <input type="checkbox"/>	37 <input type="checkbox"/>
Need Practice?							
Practice Pages	25	26	27	28	29	30	31

SPI	7.2.spi.10	7.2.spi.11	7.3.spi.1	7.3.spi.2	7.3.spi.3	7.3.spi.4	7.3.spi.5
Test Questions	2 <input type="checkbox"/>	11 <input type="checkbox"/>	18 <input type="checkbox"/>	13 <input type="checkbox"/>	5 <input type="checkbox"/>	21 <input type="checkbox"/>	31 <input type="checkbox"/>
Need Practice?							
Practice Pages	32	33	34	35	36	37	38

SPI	7.3.spi.6	7.3.spi.7	7.4.spi.1	7.4.spi.2	7.4.spi.3	7.4.spi.4	7.4.spi.5
Test Questions	28 <input type="checkbox"/>	45 <input type="checkbox"/>	24 <input type="checkbox"/>	7 <input type="checkbox"/>	32 <input type="checkbox"/>	19 <input type="checkbox"/>	12 <input type="checkbox"/> 26 <input type="checkbox"/>
Need Practice?							
Practice Pages	39	40	41	42	43	44	45

SPI	7.4.spi.6	7.4.spi.7	7.4.spi.8	7.5.spi.1	7.5.spi.2	7.5.spi.3
Test Questions	47 <input type="checkbox"/>	43 <input type="checkbox"/>	22 <input type="checkbox"/>	34 <input type="checkbox"/>	38 <input type="checkbox"/> 39 <input type="checkbox"/>	4 <input type="checkbox"/>
Need Practice?						
Practice Pages	46	47	48	49	50	51

SPI	7.5.spi.4	7.5.spi.5	7.5.spi.6	7.5.spi.7	7.5.spi.8	7.5.spi.9
Test Questions	25 <input type="checkbox"/>	35 <input type="checkbox"/>	46 <input type="checkbox"/>	49 <input type="checkbox"/>	6 <input type="checkbox"/>	41 <input type="checkbox"/>
Need Practice?						
Practice Pages	52	53	54	55	56	57

Tennessee State Performance Indicators, Grade 7, Correlated to *Glencoe Mathematics: Applications and Concepts, Course 2*

State Performance Indicator	Student Edition Lesson(s)
7.1.spi.1 identify prime and composite numbers up to 50;	5-1
7.1.spi.2 compute efficiently and accurately with whole numbers, fractions, and decimals.	This spi is addressed throughout the text.
7.1.spi.3 represent numbers using a variety of equivalent forms (i.e., mixed numbers, fractions, decimals, percents, and integers);	5-4, 5-5, 5-6, 7-5, 7-6
7.1.spi.4 compare rational numbers using the appropriate symbol ($<$, $>$, $=$);	3-2, 5-8, 7-5, PS3
7.1.spi.5 identify the opposite and the reciprocal of a rational number;	3-4, 6-5
7.1.spi.6 connect percents greater than 100 and percents less than one to real-world situations;	7-6
7.1.spi.7 apply order of operations when computing with whole numbers (no more than two parentheses and no exponents);	1-3, 1-4
7.1.spi.8 solve one- and two-step real-world problems involving whole numbers, fractions, and decimals;	1-1, 1-5a, 3-6a, 4-4a, 5-2a, 6-2, 6-3, 6-3b, 6-4, 7-4a, 7-6, 7-7, 7-8, 8-1b, 8-4, 8-5, 11-7a
7.1.spi.9 use estimation strategies to select a reasonable solution to a computation involving rational numbers;	1-1, 1-5a, 2-2a, 3-6a, 4-4a, 5-2a, 6-1, 6-2, 6-3, 6-3b, 6-8, 7-4a, 8-1, 8-1b, 10-7a, 11-2, 11-7a, 12-1b
7.1.spi.10 select a reasonable solution to a real-world division problem in which the remainder must be considered.	1-5a, 6-3b, 8-1b, PS9, Ch 1 Mixed Problem Solving (p. 596)
7.1.spi.11 connect rational numbers to locations on the number line;	3-1, 3-2, 6-1, 9-1
7.1.spi.12 use ratios to represent quantitative relationships.	7-1, 7-2, 7-3, 7-4, 7-7, 7-8
7.2.spi.1 extend geometric and numerical patterns;	1-7, 1-7b, 3-6a
7.2.spi.2 apply function rules;	4-6
7.2.spi.3 extend rate charts to solve real-world problems.	1-4, 1-5a, 1-7, Ch 1 STP, 3-6a, 7-2b, 10-7a

STP = Standardized Test Practice, PS = Problem Solving

State Performance Indicator	Student Edition Lesson(s)
7.2.spi.4 generalize patterns in data represented in tables and graphs;	3-6a, 4-6a, 4-6
7.2.spi.5 represent mathematical statements and real-world situations using symbols;	1-4, 1-5, 3-4, 3-6, 4-1, 4-2, 4-3, 4-4, 4-5
7.2.spi.6 evaluate algebraic expressions for a given value of up to two variables;	1-4, 3-4, 3-5, 3-6, 3-7
7.2.spi.7 solve one-step linear equations.	4-6
7.2.spi.8 solve real-world problems involving one-step linear equations;	4-6
7.2.spi.9 identify whole numbers that satisfy a given one-variable one-variable linear inequality;	4-5
7.2.spi.10 select the scatterplot that represents the data in tabular form;	2-2
7.2.spi.11 interpret graphs which represent rates of change.	6-9a, 12-4b
7.3.spi.1 identify the results of transformations of two-dimensional figures (i.e., turns/rotations, flips/reflections, slides/translations).	10-8, 10-9, 10-9b
7.3.spi.2 classify triangles by angle, size, and length of sides;	10-4
7.3.spi.3 determine congruence of line segments, angles, and polygons;	10-1b, 10-3, 10-3b, 10-4, 10-4b, 10-5, 10-8, 10-9, 10-9b
7.3.spi.4 classify polygons by properties;	10-4, 10-5
7.3.spi.5 use ordered pairs to describe given points in a coordinate system.	3-3
7.3.spi.6 determine the measure of an angle of a triangle given the measures of the other two angles;	10-4
7.3.spi.7 apply spatial reasoning and visualization to solve real-world problems.	7-4a, 12-1b
7.4.spi.1 apply formulas to determine the areas of rectangles and triangles;	6-8, 11-5
7.4.spi.2 determine the distance between two points on the x - or the y -axis in Quadrant I.	
7.4.spi.3 convert from one unit to another within the same system;	1-8, 6-7
7.4.spi.4 select units of appropriate size and type to measure angles, perimeter, area, surface area, and volume;	6-8, 10-1a, 11-4, 11-5, 11-6, 11-7, 12-2, 12-3, 12-4, 12-5
7.4.spi.5 apply formulas to determine the area of parallelograms, trapezoids, and circles.	11-4, 11-5, 11-6

State Performance Indicator	Student Edition Lesson(s)
7.4.spi.6 estimate length, perimeter, circumference, area, and volume using a variety of strategies;	6-8, 6-9a, 6-9, 11-4, 11-5, 11-6, 12-2, 12-3, 12-5
7.4.spi.7 find or estimate the area of irregular and complex shapes;	11-7
7.4.spi.8 solve problems involving scale factors using ratios and proportions.	7-4
7.5.spi.1 interpret bar and line graphs to answer questions and solve real-world problems.	2-2a, 2-2, 2-7, 2-8
7.5.spi.2 interpret circle graphs displaying real-world data;	10-2
7.5.spi.3 determine the mean for a data set;	2-4
7.5.spi.4 determine the median for a data set;	2-4
7.5.spi.5 make predictions based on data;	2-2a, 2-2, 2-3, 2-4, 2-5, 2-8, 8-3, 9-1, 9-6a, 9-6, 10-2
7.5.spi.6 use a tree diagram or organized list to determine all possible outcomes of a simple compound event.	9-2
7.5.spi.7 connect data sets and their graphical representation (i.e., bar graphs, stem-and-leaf plots, box plots, and scatterplots);	2-2a, 2-2, 2-5, 2-6, 2-7, 2-7b, 10-2
7.5.spi.8 use proportional thinking to make conjectures about results of experiments and simulations;	9-6, 9-6b
7.5.spi.9 connect the symbolic representation of a probability to an experiment.	9-6, 9-6b

Diagnostic Test



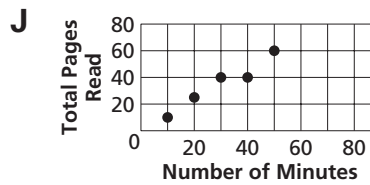
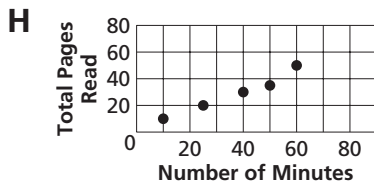
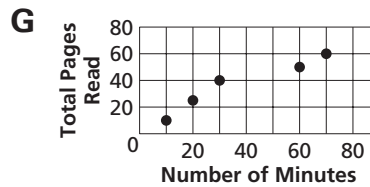
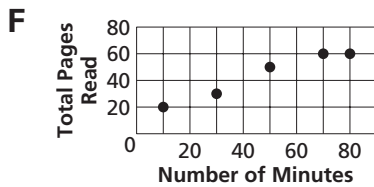
Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

- 1 Rick started a math club at his middle school. After looking at his sign-up sheet, he noticed that there were 13 girls and 18 boys on the list. What is the ratio of boys to the total number of students who signed up? **7.1.spi.12** 1 _____
- A** $\frac{13}{31}$ **B** $\frac{18}{31}$ **C** $\frac{13}{18}$ **D** $\frac{18}{13}$

- 2 Derek kept data in a table to keep track of how long it took him to read a certain number of pages. Which scatterplot represents Derek's data? 2 _____

Number of Minutes	10	20	30	40	50
Pages Read	10	25	40	40	60

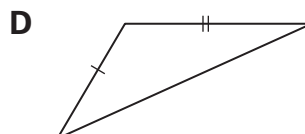
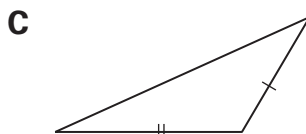
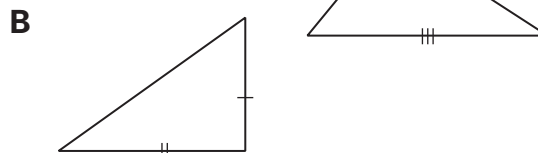
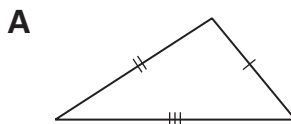
7.2.spi.10



- 3 What is the next term in this sequence: 2, 6, 18, 54 ...? **7.2.spi.1** 3 _____
- A** 3 **B** 90 **C** 162 **D** 486

- 4 Mikayla earned the following amounts of money baby-sitting Monday through Friday: \$35, \$25, \$20, \$25, and \$30. What is the mean amount of money that she earned? **7.5.spi.3** 4 _____
- F** \$25 **G** \$27
H \$30 **J** \$33

- 5 Which polygon is congruent to the one shown at the right? **7.3.spi.3** 5 _____



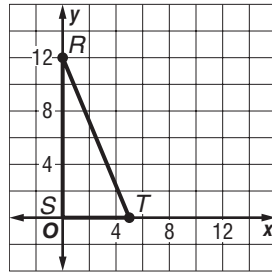
Diagnostic Test (continued)

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 If you spin a spinner 5 times and 3 out of those 5 times it lands on red, how many times would you expect it to land on red in 10 spins? **7.5.spi.8** 6 _____
- F 3 times
 G 5 times
 H 6 times
 J 8 times

- 7 Find RT . **7.4.spi.2** 7 _____

- A 5 units
 B 12 units
 C 13 units
 D 17 units



- 8 Mr. Walker had a paper he wanted to type for his English class. Monday he typed $\frac{7}{10}$ of his paper, and on Tuesday he typed $\frac{1}{5}$ of his paper. How much of his paper is left to type? **7.1.spi.2** 8 _____
- F $\frac{1}{15}$ G $\frac{1}{10}$
 H $\frac{7}{50}$ J $\frac{8}{15}$

The table shows the number of hours and the distances Bruce traveled when he went on vacation with his family.

Number of Hours	2	3	5	6	9
Distance (miles)	124	186	310	372	558

- 9 Find the rate at which Bruce was traveling. **7.2.spi.3** 9 _____
- A 55 mi/h
 B 60 mi/h
 C 62 mi/h
 D 66 mi/h
- 10 What is the pattern in the table? **7.2.spi.4** 10 _____
- F Each hour, Bruce drove 62 miles.
 G Each hour, Bruce drove at exactly 60 mi/h.
 H Each hour, Bruce drove for 62 minutes.
 J Bruce drove over 550 miles in 9 hours.

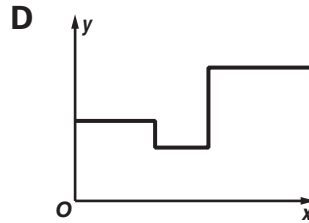
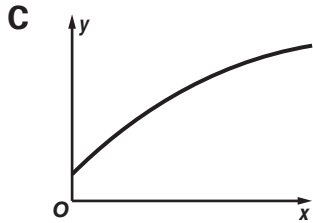
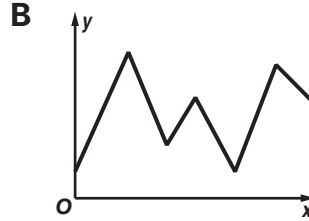
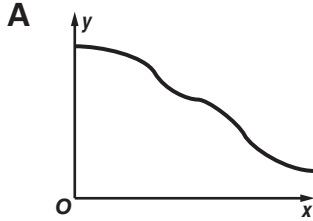


Diagnostic Test (continued)



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 Which graph could model the temperature of an oven after it is turned on? **11** _____

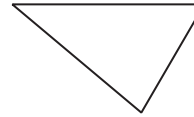


12 One piece of the design on Jamile's comforter is shaped like a parallelogram with a base of 4 centimeters and a height of 3 centimeters. What is the area of the piece? **7.4.spi.5** **12** _____

- F** 6 cm²
- G** 8 cm²
- H** 12 cm²
- J** 16 cm²

13 Classify the triangle by its angles. **7.3.spi.2** **13** _____

- A** acute triangle
- B** obtuse triangle
- C** equilateral triangle
- D** right triangle



14 Which of these is a prime number? **7.1.spi.1** **14** _____

- F** 6
- G** 15
- H** 24
- J** 29

15 The number of tourists t waiting in line to see a show in Gatlinburg increased by 25 and is now 72. Which equation represents this situation? **15** _____

- A** $t - 25 = 72$
 - B** $t + 25 = 72$
 - C** $t + 72 = 25$
 - D** $25 - t = 72$
- 7.2.spi.5**



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.

- 16** The table shows the shipping charges for an online CD store. Which describes the pattern? **7.2.spi.3** **16** _____

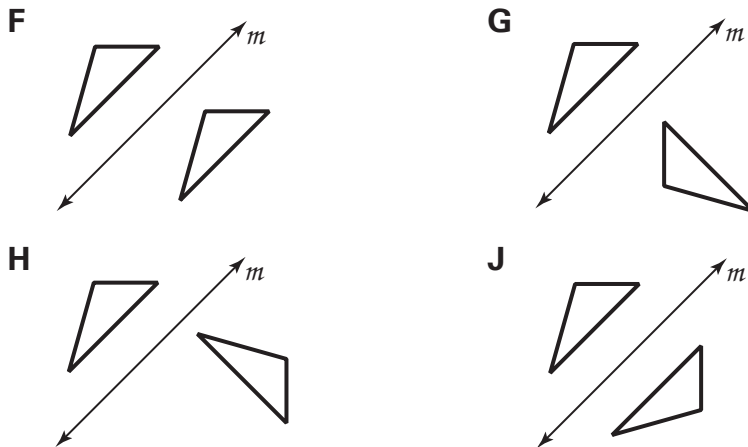
CDs	1	2	4	8	10
Shipping	\$2.95	\$3.95	\$5.95	\$9.95	\$11.95

- F** Each CD costs \$1 to ship.
G Each CD costs \$2.95 to ship.
H Shipping is \$2.95 for the first CD and \$1 for each additional CD.
J Shipping is \$1 for the first CD and \$2.95 for each additional CD.

- 17** Which is $\frac{15}{6}$ as a mixed number in simplest form? **7.1.spi.3** **17** _____

- A** $2\frac{1}{4}$ **B** $2\frac{1}{2}$
C $2\frac{3}{4}$ **D** $3\frac{5}{6}$

- 18** Which of the following shows a reflection over line m ? **7.3.spi.1** **18** _____



- 19** What is the perimeter of an equilateral triangle with side lengths of 6 centimeters? **7.4.spi.4** **19** _____

- A** 18 cm **B** 18 cm²
C 36 cm **D** 36 cm²

- 20** Blake is buying cheesecakes for a surprise birthday party. Blake expects 59 people to attend. If each cheesecake has 18 slices, how many cakes will he need in order for each guest to have a slice? **7.1.spi.10** **20** _____

- F** 2 cakes **G** 3 cakes
H 4 cakes **J** 5 cakes



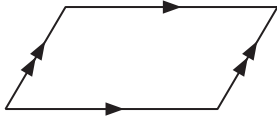
Diagnostic Test (continued)



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.

- 21** Which of these describes this polygon? **7.3.spi.4**

21 _____



- A** square, rectangle
- B** parallelogram, quadrilateral
- C** rectangle, rhombus
- D** square, quadrilateral

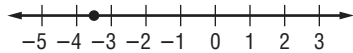
- 22** Two towns are 480 miles apart. About how far apart will they appear on a map with a scale of 1 inch = 100 miles? **7.4.spi.8**

22 _____

- F** 3 in.
- G** 4 in.
- H** 5 in.
- J** 6 in.

- 23** Which rational number is graphed on the number line? **7.1.spi.11**

23 _____



- A** $-\frac{7}{2}$
- B** $-\frac{2}{7}$
- C** $\frac{2}{7}$
- D** $\frac{7}{2}$

- 24** Mr. Gaylen wants to carpet his room. His rectangular room is 18 feet by 22 feet. How many square feet of carpet should Mr. Gaylen order? **7.4.spi.1**

24 _____

- F** 40 ft²
- G** 80 ft²
- H** 198 ft²
- J** 396 ft²

- 25** Find the median for this set of data: 4.5, 6.3, 8.1, 4.2, 4.9, 7.3, and 3.2. **7.5.spi.4**

25 _____

- A** 4.2
- B** 4.9
- C** 6.3
- D** 8.1



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.

26 Find the area to the nearest tenth of a circle with a radius of 5 meters. **26** _____

F 15.7 m^2

G 19.6 m^2

7.4.spi.5

H 31.4 m^2

J 78.5 m^2

27 Ms. Barrington bought 4 items at a hardware store in Memphis, ranging in price from \$18.99 to \$29.99. Which is the best estimate of her total purchase? **27** _____

7.1.spi.9

A \$50

B \$100

C \$120

D \$140

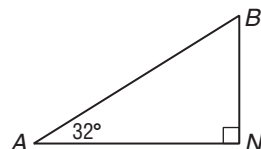
28 Find the measure of $\angle B$. **28** _____

F 32

G 48

H 58

J 122



29 Mr. Mai is an auto mechanic. He ordered 8 standard spark plugs and 5 iridium spark plugs. The standard spark plugs cost \$1.25 each and the iridium spark plugs cost \$4.50 each. Which equation can be used to find the total cost? **29** _____

A $8 \times 1.25 + 5 \times 4.50 = 32.50$

B $8 + 1.25 \times 5 + 4.50 = 18.75$

C $5 + 1.25 + 8 \times 4.50 = 42.25$

D $5 \times 1.25 + 8 \times 4.50 = 42.25$

30 Evaluate the expression $-3a - 6p$ when $a = 7$ and $p = 5$. **30** _____

F -57

7.2.spi.6

G -51

H -9

J 27

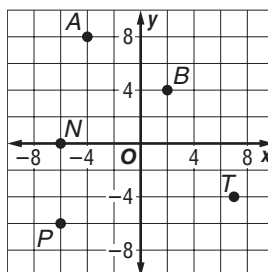
31 What are the coordinates of point N and point T ? **31** _____

A $N(-6, -6), T(7, -4)$

B $N(-2, 8), T(7, -3)$

C $N(-6, 0), T(7, -4)$

D $N(2, 4), T(7, -3)$



Go on 

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.

32 An elephant at the Nashville Zoo weighs 5,000 pounds. How many tons is this? **7.4.spi.3** **32** _____

F 2 tons

G 2.5 tons

H 3 tons

J 3.5 tons

33 Four students at the University of Tennessee decided to order several pizzas to eat during their study session. Samantha ate $\frac{1}{3}$ of a pizza, Elizabeth ate $\frac{5}{12}$ of a pizza, Mandy ate $\frac{1}{6}$ of a pizza, and Mallory ate $\frac{7}{24}$ of a pizza. Which statement is true? **7.1.spi.4** **33** _____

Samantha ate $\frac{1}{3}$ of a pizza, Elizabeth ate $\frac{5}{12}$ of a pizza, Mandy ate $\frac{1}{6}$ of a pizza, and Mallory ate $\frac{7}{24}$ of a pizza. Which statement is true? **7.1.spi.4**

A $\frac{5}{12} > \frac{7}{24}$

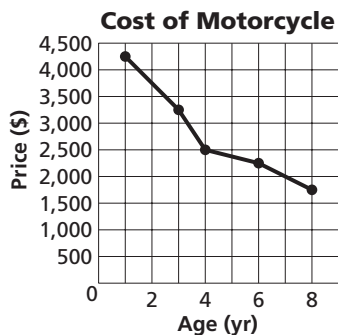
B $\frac{1}{3} < \frac{7}{24}$

C $\frac{1}{6} > \frac{1}{3}$

D $\frac{1}{3} = \frac{5}{12}$

Use the following information to answer Questions 34 and 35.

Darin was planning to buy a used motorcycle so he wanted to estimate a reasonable price for a motorcycle that was 10 years old. He was checking prices and made a line graph to show the data he found.



34 What was the price Darin found for a motorcycle that was 4 years old? **7.5.spi.1** **34** _____

F \$1,750

G \$2,250

7.5.spi.1

H \$2,500

J \$4,250

35 From the trend in the graph, what would be the price Darin might predict for a motorcycle that is 10 years old? **7.5.spi.5** **35** _____

A \$200

B \$400

C \$500

D \$1,200



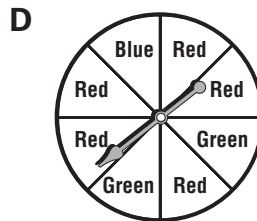
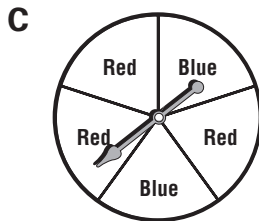
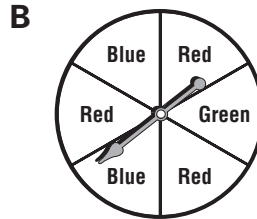
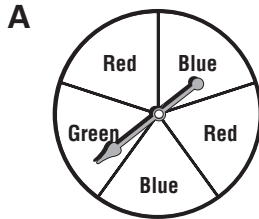
Diagnostic Test (continued)



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.

41 Which spinner would most likely land on red? **7.5.spi.9**

41 _____



42 Kathy was getting married and went shopping for necklaces for her bridesmaids and herself. She bought her 4 bridesmaids matching necklaces, and she bought herself a different necklace that cost \$98.75. Her total bill was \$270.71. Find the cost of one of the bridesmaid's necklaces. **7.1.spi.8**

42 _____

F \$34.39

G \$42.99

H \$54.14

J \$92.37

43 The Granados are building a deck on their new home. The shape and dimensions of the deck are shown. Find the area of the deck.

43 _____

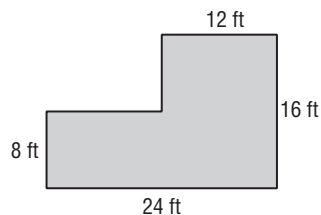
A 80 ft²

B 192 ft²

7.4.spi.7

C 288 ft²

D 384 ft²



44 Holly walks to a fruit stand after school, and she purchases 4 bananas. If she pays \$2.60, what is the cost of one banana? **7.2.spi.8**

44 _____

F \$0.50

G \$0.55

H \$0.60

J \$0.65

45 Ms. Scott decided to go for a drive in her new truck. She left her home and went 30 miles east, 2 miles south, 10 miles east, 14 miles south, 45 miles west, 7 miles north, and 5 miles east. She then stopped for a while to watch some deer. How far from home was she when she stopped to watch the deer? **7.3.spi.7**

45 _____

A 2 mi

B 7 mi

C 9 mi

D 14 mi



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.

- 46** Jane goes to a sandwich shop for lunch and has 2 choices for sandwiches (tuna or chicken) and 3 choices for drinks (milk, juice, or bottled water). She gets one sandwich and one drink. How many possible choices did Jane have? **7.5.spi.6** **46** _____

F 4
G 5
H 6
J 8

- 47** What is the best estimate for the volume of a box that is 6.2 feet long, 4.1 feet wide, and 1.8 feet high? **7.4.spi.6** **47** _____

A 12 ft^3
B 24 ft^3
C 48 ft^3
D 62 ft^3

- 48** Rebecca was watching the news and saw that the temperature had just risen 14° . How would you describe and represent the opposite of this change? **7.1.spi.5** **48** _____

F increased 14° ; $+14^\circ$
G dropped 14° ; $+14^\circ$
H increased 14° ; -14°
J dropped 14° ; -14°

- 49** The stem-and-leaf plot shows the number of community service hours that some students worked to help people in their communities. Which set of data could be represented by this plot? **7.5.spi.7** **49** _____

Stem	Leaf
1	0 4
2	1 3 8
3	2
4	7
	$1 0 = 10$

A 14, 21, 23, 28, 32, 47
B 10, 14, 21, 23, 28, 32, 47
C 10, 14, 21, 32, 38, 47
D 1, 2, 3, 4, 7, 8

- 50** Katie is a member of the track team at her school in Oak Ridge. She can run 50 meters in 6.25 seconds. What function rule relates Katie's distance to her time? **7.2.spi.2** **50** _____

F $d = 8t$
G $d = 8 \div t$
H $d = 8 + t$
J $d = 12.5t$



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 7.1.spi.1 Identify prime and composite numbers up to 50.

1 Which of these is a prime number? 1 _____

- A 4
- B 9
- C 13
- D 21

2 Which of these is a composite number? 2 _____

- F 2
- G 5
- H 11
- J 22

3 Sara is going to a movie and will treat 6 of her friends. The number of tickets she needs to purchase is what kind of a number? 3 _____

- A prime
- B composite
- C complement
- D supplement

4 Which of these is neither prime nor composite? 4 _____

- F 1
- G 2
- H 3
- J 4

5 Which statement is true? 5 _____

- A A composite number has exactly 2 factors, 1 and itself.
- B A prime number has exactly 2 factors, 1 and itself.
- C All prime numbers are odd numbers.
- D All composite numbers are even numbers.

Standards Practice

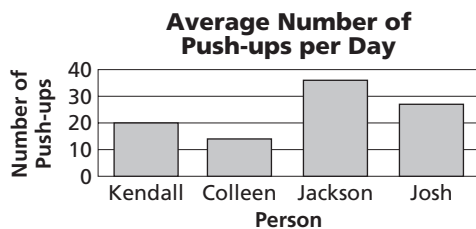
Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 7.1.spi.2 Compute efficiently and accurately with whole numbers, fractions, and decimals.

- 1 A recipe for Brenda's favorite dessert requires $1\frac{1}{4}$ cups of sugar. To triple the recipe, how much sugar would be used? 1 _____

A $2\frac{1}{2}$ cups B $3\frac{1}{4}$ cups C $3\frac{3}{4}$ cups D $4\frac{1}{4}$ cups

- 2 The maximum number of push-ups that Kendall has ever completed at one time is 2.5 times his average number of push-ups per day. Use the bar graph to help determine the maximum number of push-ups Kendall has done. 2 _____



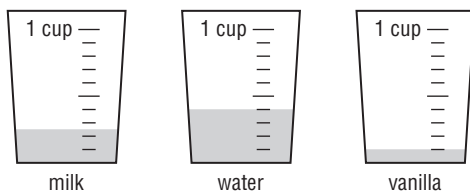
F 35 push-ups G 50 push-ups H 68 push-ups J 90 push-ups

- 3 Jaylynn attends Vanderbilt University in Nashville. She has a physics test on Friday. On Tuesday, she studied $\frac{4}{9}$ of the material for the test. On Wednesday, she studied $\frac{1}{3}$ of the material. How much material had she reviewed on Tuesday and Wednesday? 3 _____

A $\frac{5}{12}$ B $\frac{5}{9}$ C $\frac{2}{3}$ D $\frac{7}{9}$

- 4 Kyle has read $\frac{3}{4}$ of his 332-page book. How many pages has he read? 4 _____
- F 83 pages G 166 pages H 232 pages J 249 pages

- 5 James has these cups filled. When he mixes the ingredients together, how much liquid does he have? 5 _____



A 0.6 cup B 0.75 cup
C 0.8 cup D 0.85 cup

Standards Practice

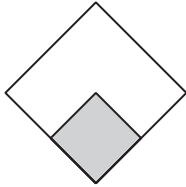


Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 7.1.spi.3 Represent numbers using a variety of equivalent forms (i.e., mixed numbers, fractions, decimals, percents, and integers).

1 What percent of the figure is shaded?

1 _____



- A** 25%
C 50%

- B** 40%
D 75%

2 Which are equivalent to the mixed number $4\frac{1}{5}$?

2 _____

- F** $\frac{4}{5}$, 4.5

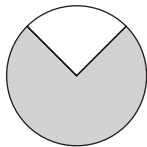
- G** $\frac{9}{5}$, 1.8

- H** $\frac{20}{5}$, 4.0

- J** $\frac{21}{5}$, 4.2

3 Written as a decimal, how much of the figure is shaded?

3 _____



- A** 0.25
C 0.75

- B** 2,500
D 7,500

4 Marvin was trying to explain fractions to his little brother, so he used a model. Each whole was divided into 6 parts to explain sixths. He had 13 of the sixths shaded as shown. What is this as a mixed number?

4 _____



- F** $1\frac{3}{6}$

- G** $2\frac{1}{6}$

- H** $3\frac{2}{6}$

- J** $13\frac{1}{6}$

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 7.1.spi.4 Compare rational numbers using the appropriate symbol ($<$, $>$, $=$).

1 Brent has flower seeds measuring $\frac{5}{32}$ inch, $\frac{1}{16}$ inch, $\frac{1}{8}$ inch and $\frac{3}{16}$ inch. Which statement is true? **1** _____

A $\frac{3}{16} > \frac{5}{32}$

B $\frac{3}{16} = \frac{5}{32}$

C $\frac{5}{32} > \frac{3}{16}$

D $\frac{3}{16} < \frac{1}{16}$

2 Which statement is true? **2** _____

F $0.5 = \frac{6}{9}$

G $\frac{6}{9} < 0.05$

H $0.5 > \frac{6}{9}$

J $0.5 < \frac{6}{9}$

3 Which statement is true? **3** _____

A $3\frac{1}{4} < 3\frac{2}{8}$

B $3\frac{1}{4} = 3\frac{2}{8}$

C $3\frac{2}{4} < 3\frac{1}{8}$

D $3\frac{1}{4} > 3\frac{2}{8}$

4 Michele has some beads on a necklace with lengths measuring $\frac{1}{4}$ inch, $\frac{1}{8}$ inch, $\frac{7}{32}$ inch, $\frac{12}{16}$ inch, $\frac{5}{8}$ inch and $\frac{3}{16}$ inch. Which statement is true? **4** _____

F $\frac{12}{16} = \frac{5}{8}$

G $\frac{7}{32} > \frac{12}{16}$

H $\frac{1}{4} < \frac{1}{8}$

J $\frac{3}{16} < \frac{1}{4}$

5 Which statement is true? **5** _____

A $4.73 < 4.37$

B $4.37 < 4.73$

C $4.37 > 4.73$

D $4.37 = 4.73$

Standards Practice

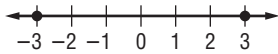


Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 7.1.spi.5 Identify the opposite and the reciprocal of a rational number.

- 1 The number line has 2 numbers graphed. What is the relationship between these 2 numbers?

1 _____



- A additive identity
- B multiplicative identity
- C opposites
- D reciprocals

- 2 When two numbers are reciprocals, what is their product?

2 _____

- F -1
- G 0
- H 1
- J 2

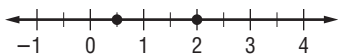
- 3 Mary just found \$7. What is the opposite of finding \$7?

3 _____

- A finding \$14
- B losing \$14
- C finding \$0.70
- D losing \$7

- 4 The number line has 2 numbers graphed. What is the relationship between these 2 numbers?

4 _____



- F additive identity
- G multiplicative identity
- H opposites
- J reciprocals

- 5 Bobbie was earning \$8 an hour and she wanted to know how many hours she would need to work to earn \$96. She wrote the equation $8x = 96$ and knew that to solve the equation she would have to multiply by the reciprocal of 8. What must she multiply by?

5 _____

- A -8
- B $-\frac{1}{8}$
- C $\frac{1}{8}$
- D 12

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 7.1.spi.6 Connect percents greater than 100 and percents less than one to real-world situations.

1 What percent of the shapes are quadrilaterals?

1 _____



- A 0%
- B 2%
- C 40%
- D 100%

2 Bailey's Spanish test had 100 problems with an additional 10 problems of extra credit. Each problem was worth 1 point. If Bailey got 92 of the original 100 problems and all 10 of the extra credit problems correct, what percentage did she earn on the test?

2 _____

- F 92%
- G 100%
- H 102%
- J 110%

3 A clothing store owner in Knoxville said that in order to make a profit, he would put a 140% mark-up on all his clothing. If he bought a pair of jeans for \$15, what would he sell the jeans for?

3 _____

- A \$14
- B \$22.50
- C \$36
- D \$57

4 One thousand people were surveyed about their TV-viewing habits. Five of those surveyed reported that they had stopped watching television. What percent of those surveyed had stopped watching television?

4 _____

- F 0.5%
- G 2%
- H 5%
- J 50%

5 If 3 out of every 500 people surveyed had exactly 25 coins in their pockets, what is the percent of people who had exactly 25 coins in their pockets?

5 _____

- A 0.4%
- B 0.6%
- C 3%
- D 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 7.1.spi.7 Apply order of operations when computing with whole numbers (no more than two parentheses and no exponents).

1 Simplify the expression $(45 + 3) \div 6 - (3 + 1)$. **1** _____

A 2

B 4

C 12

D 24

2 Which expression is equal to 8? **2** _____

F $\frac{4 + 16}{4}$

G $17 - 18 \div 2$

H $24 \div 3 - 5$

J $(24 + 6) \div 5 - 4$

3 Donna bought 4 pairs of socks on sale for \$0.50 off each pair. They normally sell for \$3.50 each. Which expression represents the final amount of her purchase? **3** _____

A $(3.50 \times 4) - 0.50$

B $(4 - 0.50) \times 3.50$

C $(3.50 - 0.50) \times 4$

D $(3.50 \times 0.50) + 4$

4 Simplify the expression $45 \div 9 - 21 \div 3$. **4** _____

F $-5\frac{1}{3}$

G -2

H 2

J 12

5 Ryan was shopping at the mall in Memphis and bought 4 caps at \$7.00 each. He used a \$2-off coupon. After the coupon was applied, the tax was \$1.96. Ryan's friend paid half of the final cost. Which expression represents the total Ryan paid? **5** _____

A $(4 \times 7 - 2 + 1.96) \div 2$

B $(4 \times 7 + 2 - 1.96) \div 2$

C $(4 \times 7 - 4 + 1.96) \div 2$

D $(4 \times 7 + 2 + 1.96) \div 2$

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 7.1.spi.8 Solve one- and two-step real-world problems involving whole numbers, fractions, and decimals.

- 1 Jenna was going to clean out her closet. She took half of the shirts out of her closet and gave them to charity. Now she has 24 shirts. How many shirts were originally in the closet? **1** _____
- A** 12 shirts
B 24 shirts
C 48 shirts
D 72 shirts
- 2 Marilyn spent \$83 on computer supplies and paid d dollars in sales tax. The total was \$87.98. How much sales tax did Marilyn pay? **2** _____
- F** \$3.98
G \$4.98
H \$5.00
J \$6.00
- 3 David cut an apple into s equal slices. He ate 6 slices and had 2 slices left. Which equation models the problem? **3** _____
- A** $s - 6 = 2$
B $s + 6 = 2$
C $6s = 2$
D $6 - s = 2$
- 4 Jared went to the store and bought a box of cereal for \$3.50 and 2 gallons of milk. His bill before tax was \$9.08. What was the cost of one gallon of milk? **4** _____
- F** \$1.75
G \$2.79
H \$4.54
J \$5.58
- 5 A box contains 8 oranges. Each orange costs \$0.43. How much will it cost to purchase $\frac{3}{4}$ of all the oranges in the box? **5** _____
- A** \$0.86
B \$2.58
C \$3.44
D \$8.43

Standards Practice

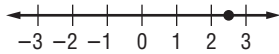


Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 7.1.spi.11 Connect rational numbers to locations on the number line.

- 1 What number is graphed on the number line?

1 _____



A -2.5

B -2

C 2

D 2.5

- 2 What letter on the number line corresponds to -4 ?

2 _____



F F

G G

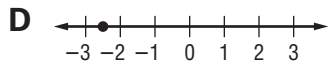
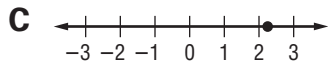
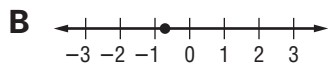
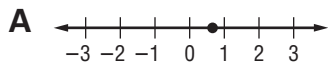
H H

J J

- 3 A recipe for oatmeal bread requires the following ingredients:

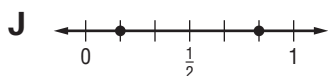
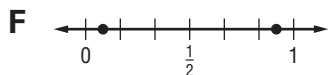
3 _____

$2\frac{1}{4}$ teaspoons of yeast, $2\frac{1}{2}$ cups of water, $\frac{1}{2}$ cup of sugar, $\frac{2}{3}$ cup oatmeal, $\frac{1}{4}$ cup of oil and 7 cups of flour. Which of the number lines has the correct number of cups of oatmeal graphed?



- 4 Which number line shows the graphs of $\frac{1}{6}$ and $\frac{5}{12}$?

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 7.1.spi.12 Use ratios to represent quantitative relationships.

Use the following information to answer Questions 1 and 2.

One of Gabriel's favorite football teams is the Tennessee Titans. Gabriel likes to watch them play at the Nashville Coliseum. Suppose next year they win 13 out of the first 15 games.

1 What will be the ratio of the Titans' wins to total games? **1** _____

A $\frac{2}{15}$

B $\frac{2}{13}$

C $\frac{13}{28}$

D $\frac{13}{15}$

2 What will be the ratio of the Titans' losses to wins? **2** _____

F $\frac{2}{15}$

G $\frac{2}{13}$

H $\frac{13}{28}$

J $\frac{13}{15}$

3 If Debbie can run 4 miles in 34 minutes, how long will it take her to run 6 miles at the same rate? **3** _____

A 38 min

B 42 min

C 51 min

D 68 min

4 Kevin's class has 15 girls and 10 boys. If 3 new students join the class, two girls and one boy, what will be the new ratio of girls to boys? **4** _____

F $\frac{11}{17}$

G $\frac{12}{16}$

H $\frac{16}{12}$

J $\frac{17}{11}$

5 A softball diamond measures 65 feet by 65 feet while a baseball diamond measures 90 feet by 90 feet. What is the ratio in simplest form for the length of a side of a softball diamond to the length of a side of a baseball diamond? **5** _____

A $\frac{5}{18}$

B $\frac{13}{36}$

C $\frac{5}{13}$

D $\frac{13}{18}$

Standards Practice

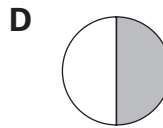
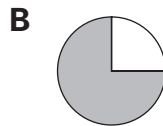
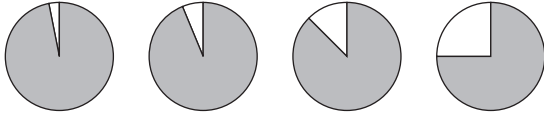


Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 7.2.spi.1 Extend geometric and numerical patterns

1 Which figure continues this pattern?

1 _____



2 What is the next term in this sequence: 400, 80, 16, 3.2 ...?

2 _____

F 0.64

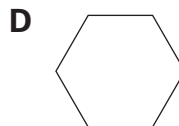
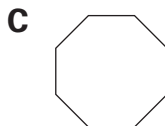
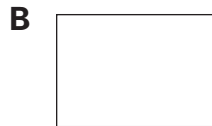
G 0.84

H 2.7

J 5.0

3 What figure continues this pattern?

3 _____



4 Aaron just started a job at a bookstore. His boss is paying him \$10 per hour and will raise his wage \$0.50 per hour every six months. What will Aaron's wage per hour be after 12 months of working at the bookstore?

4 _____

F \$10.00/h

G \$10.50/h

H \$11.00/h

J \$12.00/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 7.2.spi.2 Apply function rules.

1 Given the function $y = 3x + 5$, what is the value of y when x is 6? **1** _____

- A 8
- B 14
- C 23
- D 33

2 Sam was trying to figure out a formula that would relate his travel time in hours h and his distance driven d . He knew in 1 hour he had traveled 50 miles, in 2 hours he had traveled 100 miles, in 3 hours he had traveled 150 miles, and in 4 hours he had traveled 200 miles. Find the formula relating h and d . **2** _____

- F $d = 50h$
- G $d = 50 - h$
- H $d = \frac{50}{h}$
- J $d = 50 + h$

3 Jesse owns a barber shop where he offers 3 methods to cut hair—the clippers, scissors, or razor cut. The cost for each type of cut is: clippers \$9, scissors \$12, and razor \$14. The sales tax formula is $t = 0.05 \times c$, where c is the cost of services and t is the amount of sales tax. Use the formula to determine which is the correct sales tax table for services offered at Jesse's barber shop. **3** _____

A

Services	Clippers	Scissors	Razor
Cost (c)	\$9.00	\$13.00	\$14.00
Sales Tax (t)	\$0.45	\$0.65	\$0.70

B

Services	Clippers	Scissors	Razor
Cost (c)	\$9.00	\$10.00	\$12.00
Sales Tax (t)	\$4.50	\$5.00	\$6.00

C

Services	Clippers	Scissors	Razor
Cost (c)	\$9.00	\$11.00	\$12.00
Sales Tax (t)	\$0.45	\$0.55	\$0.60

D

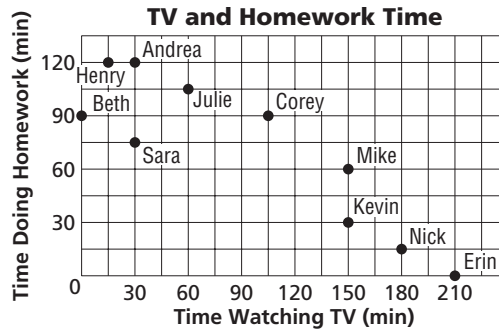
Services	Clippers	Scissors	Razor
Cost (c)	\$9.00	\$12.00	\$14.00
Sales Tax (t)	\$0.45	\$0.60	\$0.70

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 7.2.spi.4 Generalize patterns in data represented in tables and graphs.

- 1 Marybeth took a survey of 10 of her classmates. She recorded the number of hours they spent on homework and on watching television in one evening. The graph of her data is shown. What outcome might you predict from the graph?



1 _____

- A** The more homework students did, the more they watched television.
B Students all spend at least 1 hour doing homework.
C The more students watched television, the less time they spent doing homework.
D All students do homework every night.

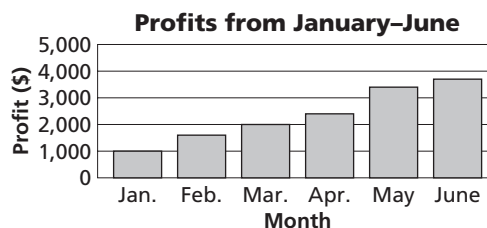
- 2 From this table of data of teeth brushing and numbers of cavities, what might you predict?

Teeth Brushings per Day	Number of Cavities
0	6
1	4
2	3
3	1

2 _____

- F** The more cavities people had, the more they brushed.
G The more often people brushed their teeth, the fewer cavities they had.
H All people brush their teeth 3 times a day.
J The fewer times people brush their teeth, the fewer cavities they have.

- 3 The bar graph shows the profits of a company in Memphis for 6 months from January through June. What conclusion might you make about the company's profits?



3 _____

- A** The profits remained about the same for the 6 months.
B The profits were increasing and decreasing for the 6 months.
C The profits were decreasing for the 6 months.
D The profits were increasing for the 6 months.

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 7.2.spi.5 Represent mathematical statements and real-world situations using symbols.

- 1 Erica said “My age in 10 years will be 3 times my age now.” Which equation represents this statement? **1** _____
- A** $A + 10 = 3A$ **B** $10A = 3A$
C $3A + 10 = A$ **D** $A + 3 = 10A$
- 2 Connor and his friends were fishing at Old Hickory Lake in Nashville. Connor said that yesterday he caught 4 more than 3 times as many fish as he caught today f . Which expression represents the number of fish Connor caught yesterday? **2** _____
- F** $4f + 3$ **G** $7 + f$
H $3f + 4$ **J** $3f + 7$
- 3 Which equation represents the statement: Five more than the quotient of a number divided by 6 is 17? **3** _____
- A** $5n + 6 = 17$
B $\frac{n}{6} + 5 = 17$
C $\frac{n}{6} - 5 = 17$
D $\frac{n}{6} + 17 = 5$
- 4 Tammy has a hot air balloon. As she was riding in it, she descended 400 feet to a height of 700 feet. Which equation represents this situation? **4** _____
- F** $h + 400 = 700$
G $h - 400 = 700$
H $h - 700 = -400$
J $400 - h = 700$
- 5 Lucia has \$460 in her savings account right now. Each week she puts \$20 into her savings account. She wants to know how many weeks it will be until she has at least \$680 in her account. Which of the following inequalities represents this situation? **5** _____
- A** $460 + 10w \geq 680$
B $460 - 10w \leq 680$
C $460 - 20w \leq 680$
D $460 + 20w \geq 680$

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 7.2.spi.7 Solve one-step linear equations.

1 Solve the equation $8 = x - 13$.

1 _____

- A -21
- B -5
- C 5
- D 21

Use the table to answer Questions 2 and 3.

x	1	2	4	7
y	8	9	11	14

2 Which is the correct equation relating x and y ?

2 _____

- F $y = x - 7$
- G $y = x + 2$
- H $y = x + 7$
- J $y = x - 2$

3 Find x when y is 19.

3 _____

- A 12
- B 22
- C 26
- D 133

4 Solve the equation $\frac{c}{20} = 7$.

4 _____

- F 3
- G 13
- H 27
- J 140

5 Solve the equation $12n = 195$.

5 _____

- A 16.25
- B 18.25
- C 183
- D 207

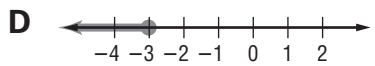
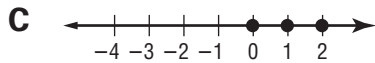
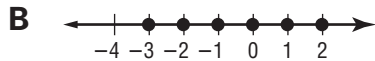
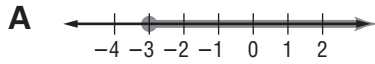
Standards Practice



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 7.2.spi.9 Identify whole numbers that satisfy a given one-variable linear inequality.

- 1 Which of these is a graph of the set of the whole numbers that satisfies the inequality $x \geq -3$? 1 _____



- 2 Which inequality represents this graph? 2 _____



F $x < 3$

G $x \leq 3$

H $x < -3$

J $x > 3$

- 3 Matthew and his sister went to visit the Nashville Zoo. A zoo staffer told them there were at least 450 people at the zoo that day. Which of the following are possibilities for the number of people that attended the zoo that day? 3 _____

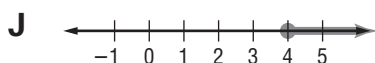
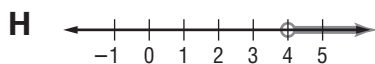
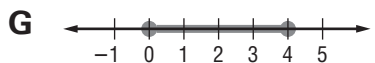
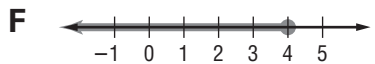
A 200, 250, 400

B 400, 500, 600

C 440, 550, 620

D 450, 520, 635

- 4 Jace wanted to start exercising. His doctor told him that since he was just starting, he should walk no more than 4 miles each day. Which of these is a graph of the number of miles Jace should walk? 4 _____



Standards Practice

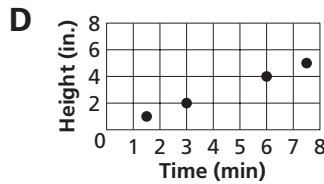
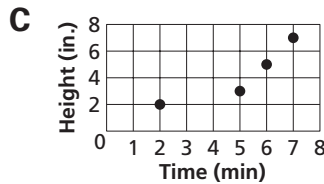
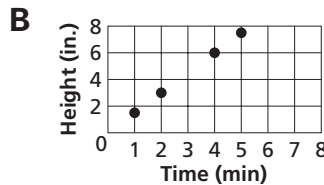
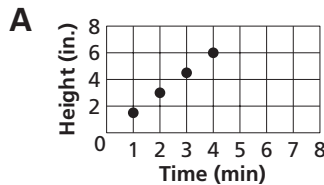


Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 7.2.spi.10 Select the scatterplot that represents the data in tabular form.

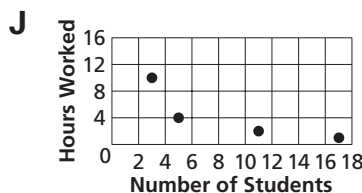
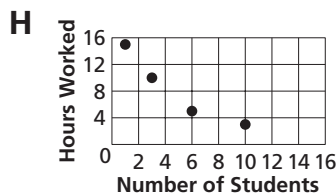
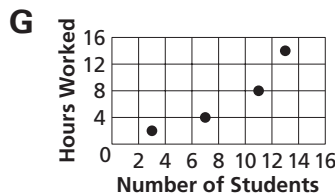
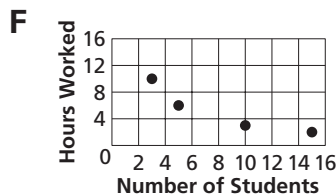
- 1 Alan made this table recording the height of the water in the bathtub at different times of the water running. Which is the scatterplot of Alan's data? 1 _____

Water Height in Bathtub				
Minutes	1	2	4	5
Height (in.)	$1\frac{1}{2}$	3	6	$7\frac{1}{2}$



- 2 Some students at the University of Tennessee were asked to give 30 hours of their time for a fund-raiser. The table shows the numbers of hours that students would work to total 30 hours. Which is the scatterplot of the data? 2 _____

Fundraiser Hours Worked				
Number of Students	3	5	10	15
Hours Worked	10	6	3	2



Standards Practice

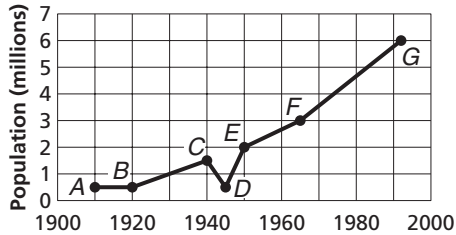


Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 7.2.spi.11 Interpret graphs which represent rates of change.

Use the following information to answer Questions 1–4.

The graph shows the population of Hong Kong from 1920 to 2000.



1 Which line segment represents zero rate of change?

1 _____

- A \overline{AB}
- B \overline{BC}
- C \overline{CD}
- D \overline{DE}

2 Which line segment represents a decrease in population?

2 _____

- F \overline{AB}
- G \overline{CD}
- H \overline{DE}
- J \overline{FG}

3 Which line segment represents the greatest rate of change?

3 _____

- A \overline{AB}
- B \overline{BC}
- C \overline{CD}
- D \overline{DE}

4 What would a steep negative slope represent in this graph?

4 _____

- F A large increase in population.
- G A large decrease in population.
- H A gradual increase in population.
- J A gradual decrease in population.

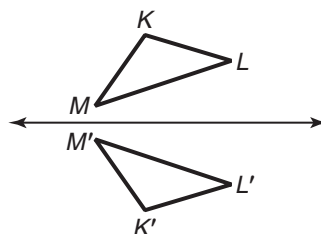
Standards Practice

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 7.3.spi.1 Identify the results of transformations of two-dimensional figures (i.e., turns/rotations, flips/reflections, slides/translations).

1 What does this transformation show?

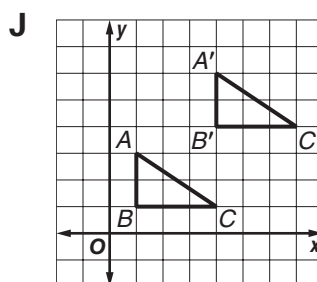
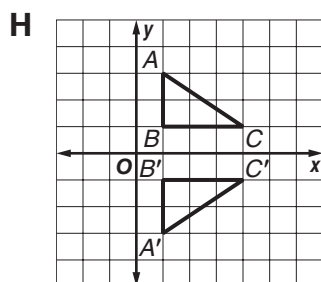
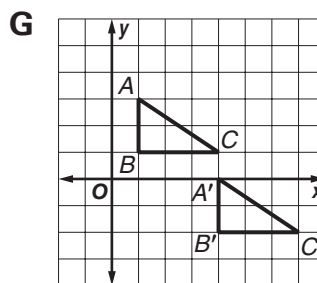
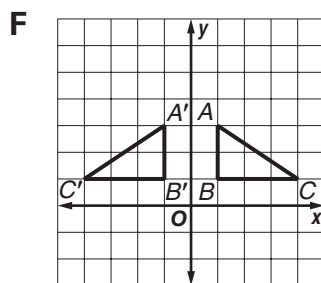
- A Slide
- B Translation
- C Rotation
- D Reflection



1 _____

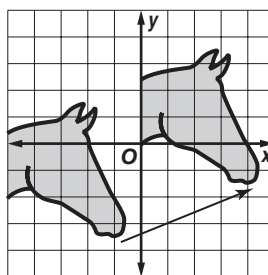
2 Which of these shows a translation of $\triangle ABC$ right 3 and down 3?

2 _____



3 When creating animations, computer programmers use translations to describe the way images move across a screen. If the figure moves as shown by the arrow, what is the rule for the translation?

- A $(x, y) \rightarrow (x + 2, y + 5)$
- B $(x, y) \rightarrow (x + 5, y + 2)$
- C $(x, y) \rightarrow (x + 2, y - 5)$
- D $(x, y) \rightarrow (x + 5, y - 2)$



3 _____

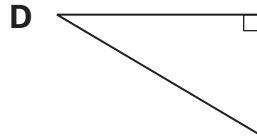
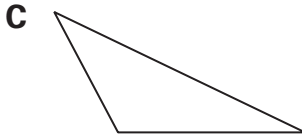
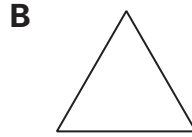
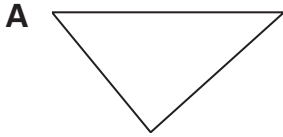
Standards Practice

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 7.3.spi.2 Classify triangles by angle, size, and length of sides.

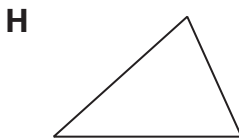
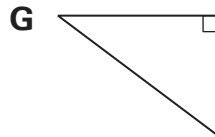
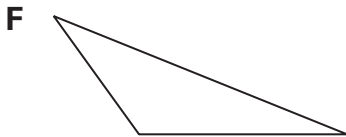
1 Which of these is an obtuse triangle?

1 _____



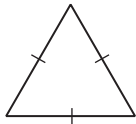
2 Carla was carving a pumpkin and wanted to use isosceles triangles for the shape of the eyes. Which triangle should she use?

2 _____



3 Classifying this triangle by the length of its sides, what would it be called?

3 _____

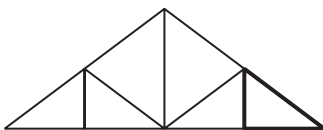


- A** equilateral
C obtuse

- B** isosceles
D scalene

4 Architects use triangles in their buildings for strength. What type of triangle is the one indicated?

4 _____



- F** equilateral
H isosceles

- G** scalene
J obtuse

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.

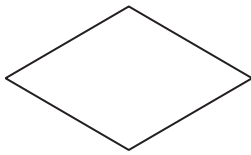
PERFORMANCE INDICATOR 7.3.spi.4 Classify polygons by properties.

- 1 Which quadrilateral is always a regular polygon? 1 _____
A rhombus **B** rectangle
C trapezoid **D** square

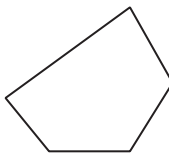
- 2 What quadrilateral has 2 pairs of congruent sides, 2 pairs of parallel sides, and four right angles? 2 _____
F rectangle **G** rhombus
H parallelogram **J** trapezoid

- 3 Which polygon is regular? 3 _____

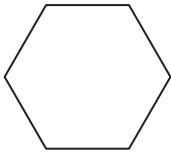
A



B



C



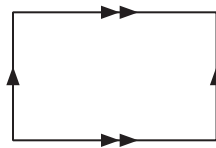
D



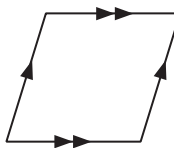
- 4 Jaron was driving down the road and came to a stop sign. What shape is a stop sign? 4 _____
F hexagon **G** octagon
H pentagon **J** nonagon

- 5 Kirk was building a toy barn with four sides to put his toy animals in. The shape of the base of his barn had only one pair of parallel sides. Which figure could be the base of Kirk's barn? 5 _____

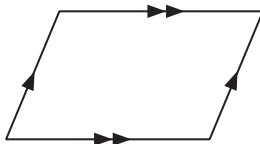
A



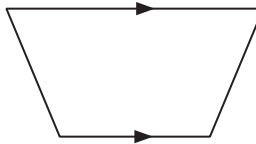
B



C



D



Standards Practice

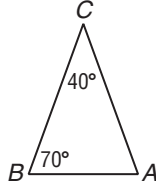


Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 7.3.spi.6 Determine the measure of an angle of a triangle given the measures of the other two angles.

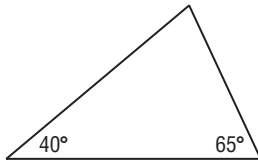
1 What is $m\angle A$?

- A 30
- B 40
- C 70
- D 110



1 _____

2 Jolene baked triangular cookies for her math class. What is the value of the missing angle measure?



- F 25
- H 95

- G 75
- J 105

2 _____

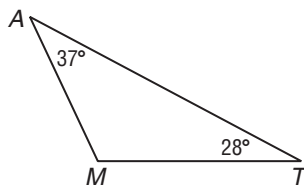
3 Madison has a triangular magnet on her refrigerator. One of the angles is a right angle and another angle measures 20° . What is the measure of the third angle of the magnet?

- A 20
- C 70

- B 50
- D 110

3 _____

4 What is $m\angle M$?



- F 9
- H 102

- G 65
- J 115

4 _____

5 In $\triangle KLP$, $m\angle K = 104$ and $m\angle L = 34$. What is $m\angle P$?

- A 34
- C 70

- B 42
- D 138

5 _____

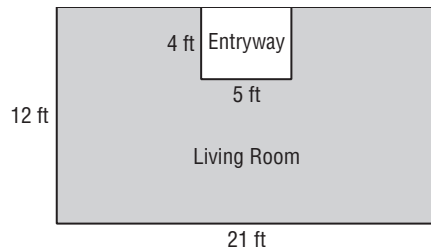
Standards Practice

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 7.3.spi.7 Apply spatial reasoning and visualization to solve real-world problems.

- 1 Ms. Marian wants to carpet the living room but does not want carpet in the entryway. How many square feet of carpet does Ms. Marian need?

1 _____



- A** 20 ft² **B** 232 ft²
C 252 ft² **D** 272 ft²

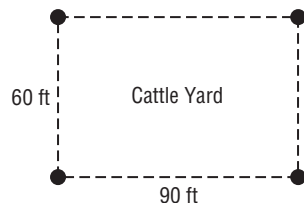
- 2 Rhonda was training to run in a marathon. One day she left from her house and jogged 2 miles north, 1 mile east, 3 miles south, 4 miles west, and then 1 mile north. She walked home from there. How many miles did she walk if she took the most direct route?

2 _____

- F** 3 mi **G** 4 mi
H 6 mi **J** 11 mi

- 3 Mr. Dougan is putting up fencing for his cattle. He has a post at each corner of the cattle yard as well as a post every 6 feet. How many fence posts will he put up in all?

3 _____



- A** 6 fence posts **B** 30 fence posts
C 50 fence posts **D** 51 fence posts

- 4 Adam, Bill, Carol, and David are standing in line at the grocery store. Carol is standing next to only one male. Adam is the last one in line. David is before Bill. In which order are the 4 people standing?

4 _____

- F** Bill, Carol, David, Adam **G** David, Carol, Bill, Adam
H Adam, Carol, Bill, David **J** Carol, David, Bill, Adam

Standards Practice

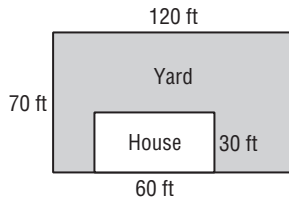


Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 7.4.spi.1 Apply formulas to determine the areas of rectangles and triangles.

- 1** Grant wants to buy tickets for the Grand Ole Opry in Nashville so he mows lawns to earn some extra money. He charges by the number of square feet he mows. The dimensions of the lawn and house of one of his customers are shown. How many square feet of lawn will Grant mow?

1 _____



- A** 1,800 ft² **B** 6,600 ft²
C 8,400 ft² **D** 10,200 ft²

- 2** Ancient Egyptians built many pyramids. These pyramids were used as tombs for their kings. Each face of one pyramid has a base about 220 meters long and a height of about 88 meters. What is the area of the face?

2 _____

- F** 616 m² **G** 4,840 m²
H 9,680 m² **J** 19,360 m²

- 3** A triangle has a base of 5 centimeters and a height of 8 centimeters. What is the area of the triangle?

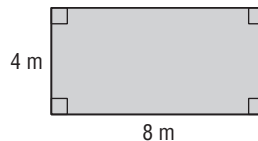
3 _____

- A** 20 cm² **B** 40 cm²
C 50 cm² **D** 58 cm²

- 4** What is the area of the rectangle?

4 _____

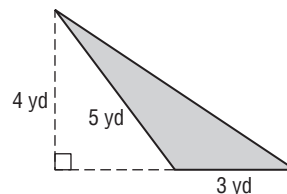
- F** 16 m² **G** 20 m²
H 24 m² **J** 32 m²



- 5** What is the area of the triangle?

5 _____

- A** 6 yd² **B** 7.5 yd²
C 10 yd² **D** 24 yd²



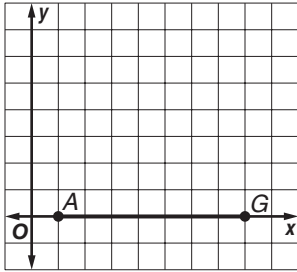
Standards Practice

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 7.4.spi.2 Determine the distance between two points on the x - or the y -axis in Quadrant I.

1 What is the length of \overline{AG} ?

1 _____



- A** 5 units
C 7 units

- B** 6 units
D 8 units

2 What is the distance between the points at (108, 0) and (82, 0)?

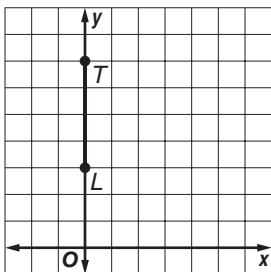
2 _____

- F** 26 units
H 106 units

- G** 28 units
J 190 units

3 What is the length of \overline{LT} ?

3 _____



- A** 3 units
C 5 units

- B** 4 units
D 6 units

4 What is the distance between the points at (0, 0) and (0, 47)?

4 _____

- F** 47 units
H 37 units

- G** 46 units
J 23.5 units

5 What is the distance between the points at (33, 0) and (41, 0)?

5 _____

- A** 2 units
C 7 units

- B** 6 units
D 8 units

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 7.4.spi.3 Convert from one unit to another within the same system.

- 1** How many millimeters are in 35 centimeters? **1** _____
A 0.035 mm **B** 0.35 mm
C 3.5 mm **D** 350 mm

- 2** Rose was traveling to Smoky Mountain National Park. It took her **2** _____
 $3\frac{1}{4}$ hours to get there from her home. How many minutes did it take her
to travel to Smoky Mountain National Park?
F 180 min
G 195 min
H 210 min
J 225 min

- 3** Marlene is growing out her hair. She measures it as $2\frac{1}{2}$ feet long. How **3** _____
many inches long is Marlene's hair?
A 25 in.
B 27 in.
C 30 in.
D 36 in.

- 4** How many kilograms are in 43,641 grams? **4** _____
F 43.641 kg **G** 436.41 kg
H 4,364.1 kg **J** 43,641,000 kg

- 5** How many fluid ounces are there in 3 cups? **5** _____
A 6 fl. oz
B 8 fl. oz
C 24 fl. oz
D 48 fl. oz

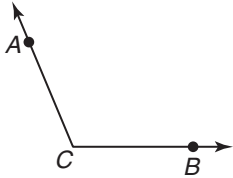
Standards Practice

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 7.4.spi.4 Select units of appropriate size and type to measure angles, perimeter, area, surface area, and volume.

- 1 To measure $\angle ACB$, what unit would be used?

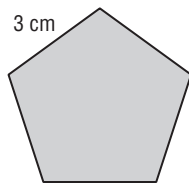
1 _____



- A feet B gallons
C centimeters D degrees

- 2 What is the perimeter of this regular pentagon?

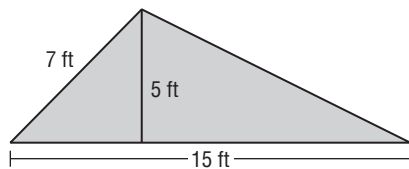
2 _____



- F 9 cm G 9 cm^2
H 15 cm J 15 cm^2

- 3 The top part of Duane's garage is shown. He wants to paint this part of the garage and needs to know the area. Find the area of the triangle.

3 _____

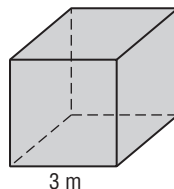


- A 37.5 ft^2 B 37.5 ft^3
C 52.5 ft D 75 ft^3

- 4 What is the volume of the cube?

4 _____

- F 27 m^4
G 27 m^3
H 27 m^2
J 27 m



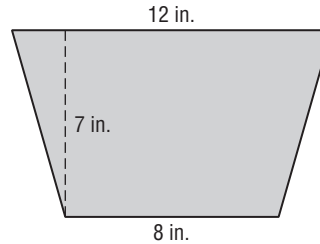
Standards Practice



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 7.4.spi.5 Apply formulas to determine the area of parallelograms, trapezoids, and circles.

- 1** Julie is making a basket for her mother. The sides of her basket are shaped like the figure. She wants to paint the basket, and she wants to find the area. What is the area of one of the sides of the basket?



1 _____

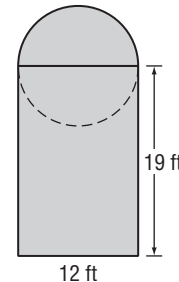
- A** 34 in^2
B 70 in^2
C 96 in^2
D 140 in^2

- 2** A carpenter is tiling a square floor with tiles that measure $\frac{2}{3}$ foot on each side. If he uses 20 tiles along a wall, what is the area of the floor to the nearest tenth?

2 _____

- F** 13.3 ft^2 **G** 177.8 ft^2
H 427.1 ft^2 **J** 711.1 ft^2

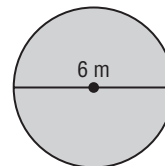
- 3** In basketball in the United States, the free-throw lane is shaped like a rectangle and has dimensions as shown. What is the area of the free-throw lane?



3 _____

- A** 31 ft^2
B 62 ft^2
C 114 ft^2
D 228 ft^2

- 4** What is the area of the circle to the nearest tenth?



4 _____

- F** 9.4 m^2
G 18.8 m^2
H 28.3 m^2
J 113.1 m^2

- 5** A parallelogram has a base of 2.4 kilometers and a height of 1.2 kilometers. What is the area of the parallelogram to the nearest tenth?

5 _____

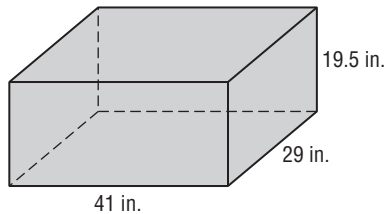
- A** 2.9 km^2
B 3.6 km^2
C 5.8 km^2
D 7.2 km^2

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 7.4.spi.6 Estimate length, perimeter, circumference, area, and volume using a variety of strategies.

- 1 Andrea is storing some of her stuffed animals in this container. She wants to know the approximate volume of the container so she can figure out how many stuffed animals it will hold. Estimate the volume of the container shown. 1 _____



- A 24,000 in³ B 30,000 in³
C 36,000 in³ D 45,000 in³

- 2 Estimate the circumference of a circle with a radius of 4.1 feet. 2 _____
- F 6 ft
G 12 ft
H 15 ft
J 24 ft

- 3 Which is the most reasonable estimate for the area of the top of an office desk? 3 _____
- A 18 ft² B 18 in²
C 18 cm² D 18 yd²

- 4 Craig is framing a picture and wants to estimate how much framing material he will need. His picture is 3.8 feet by 2.1 feet. Estimate how many feet of framing material he will need. 4 _____
- F 2 ft
G 6 ft
H 8 ft
J 12 ft

- 5 Which is the most reasonable estimate for the height of a bedroom wall? 5 _____
- A 8 km B 8 in.
C 8 ft D 8 yd

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 7.4.spi.7 Find or estimate the area of irregular and complex shapes.

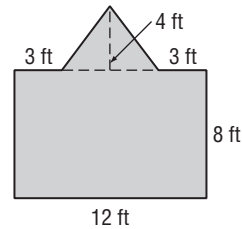
- 1** A square that is 4 meters on a side has a triangle attached at the top. The base of the triangle fits exactly on the square and the height of the triangle is 3 meters. What is the combined area of the shapes?

A 22 m^2 **B** 25 m^2
C 28 m^2 **D** 96 m^2

1 _____

- 2** Barry is building a shed in which he will store his boat. What is the area of this side of Barry's shed?

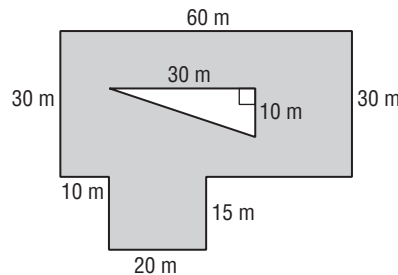
F 96 ft^2
G 108 ft^2
H 120 ft^2
J 144 ft^2



2 _____

- 3** What is the area of the shaded region?

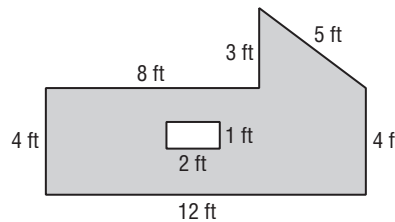
A $1,950 \text{ m}^2$
B $2,250 \text{ m}^2$
C $2,400 \text{ m}^2$
D $2,700 \text{ m}^2$



3 _____

- 4** Chad likes to play miniature golf. His favorite hole of the mini golf course is shown. What is the area of the carpeted portion of the mini golf hole?

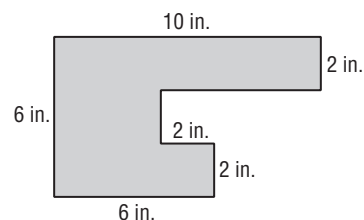
F 36 ft^2
G 42 ft^2
H 46 ft^2
J 52 ft^2



4 _____

- 5** What is the area of this irregular shaped figure?

A 24 in^2
B 32 in^2
C 36 in^2
D 40 in^2



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 7.4.spi.8 Solve problems involving scale factors using ratios and proportions.

- 1 What is the length on the map of a 32 mile road on a map with a scale of 1 inch = 8 miles? **1** _____
- A** 4 in. **B** 8 in.
C 16 in. **D** 40 in.
- 2 A map uses the scale 2 centimeters = 75 kilometers. If the distance from Ignacio's hometown to the Tri-Cities Regional Airport is 3.9 centimeters long on the map, what is the actual distance to the airport to the nearest kilometer? **2** _____
- F** 146 km
G 225 km
H 293 km
J 585 km
- 3 Shiangtai drew a scale model of his truck. He used the scale 1 inch = 8 feet. The drawing is 2.75 inches long. How long is his truck? **3** _____
- A** 11 ft
B 20 ft
C 22 ft
D 24 ft
- 4 On a map with a scale of 1 centimeter = 2 kilometers, the library is 3 centimeters from Lakeisha's home. If she leaves the library at 4:30 P.M. and walks home at a rate of 4 kilometers per hour, what time will Lakeisha arrive home? **4** _____
- F** 4:00 P.M.
G 5:00 P.M.
H 5:30 P.M.
J 6:00 P.M.
- 5 The drive from Oak Ridge to Cainsville is 146 miles. About how far apart will this drive appear on a map with a scale of 1 inch = 50 miles? **5** _____
- A** 2 in.
B 3 in.
C 45 in.
D 135 in.

Standards Practice

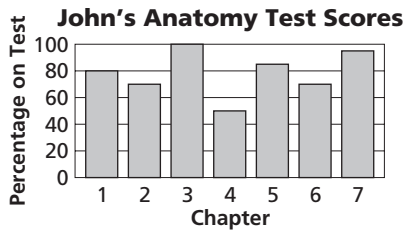


Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 7.5.spi.1 Interpret bar and line graphs to answer questions and solve real-world problems.

Use the following information to answer Questions 1 and 2.

John is a nursing student at the University of Memphis and has taken several chapter tests in his anatomy class. He decided to make a bar graph of all his test scores so he could easily see which chapters he most needed to review.



1 For which chapter test did John have the lowest grade?

- A** Chapter 2 **B** Chapter 4
C Chapter 5 **D** Chapter 7

1 _____

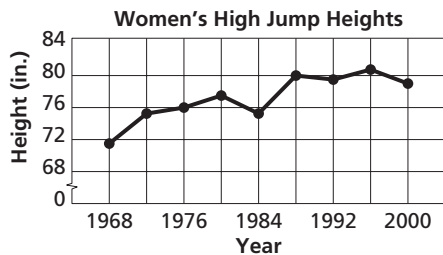
2 In which two chapter tests did John get the same score?

- F** Chapter 2 and Chapter 6 **G** Chapter 3 and Chapter 4
H Chapter 3 and Chapter 6 **J** Chapter 4 and Chapter 7

2 _____

Use the following information to answer Questions 3 and 4.

This line graph shows the winning height for the women's high jump at the Olympics from 1968 through 2000.



3 Between which 4 year span did the height of the jump show the greatest decrease?

- A** 1968–1972 **B** 1976–1980
C 1980–1984 **D** 1988–1992

3 _____

4 In what year was the height of the jump less than 72 inches?

- F** 1968 **G** 1976 **H** 1984 **J** 1996

4 _____

Standards Practice



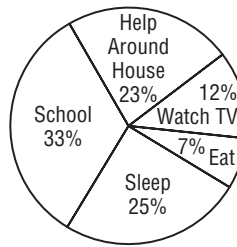
Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

PERFORMANCE INDICATOR 7.5.spi.2 Interpret circle graphs displaying real-world data.

Use the following information to answer Questions 1–3.

Milagro made a circle graph of the number of hours she spends doing different activities in a typical day.

How Milagro Spends Her Day



- 1 What does she spend the most time doing?
- A attending school
 - B eating
 - C helping around the house
 - D sleeping

1 _____

- 2 What does she spend the least time doing?
- F watching television
 - G sleeping
 - H helping around the house
 - J eating

2 _____

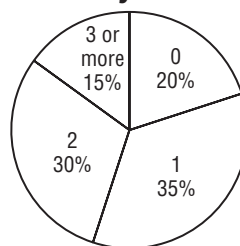
- 3 About how many hours does she spend sleeping?
- A 4 h
 - B 6 h
 - C 8 h
 - D 9 h

3 _____

Use the following information to answer Questions 4 and 5.

Martinez surveyed 40 students in his school asking them how many pets they owned. He made a graph of his survey results.

Number of Pets Owned by Students



- 4 How many students surveyed had only one pet?
- F 6
 - G 8
 - H 14
 - J 35

4 _____

- 5 What percent of the students surveyed had two or more pets?
- A 15%
 - B 18%
 - C 45%
 - D 55%

5 _____

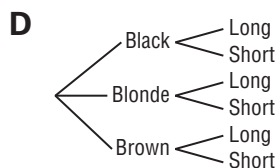
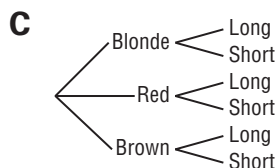
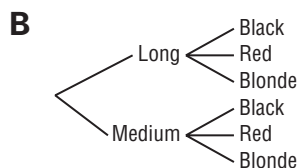
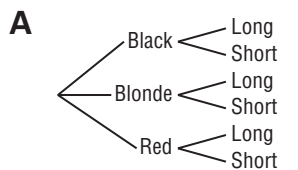
Standards Practice

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 7.5.spi.6 Use a tree diagram or organized list to determine all possible outcomes of a simple compound event.

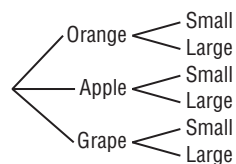
- 1 Which tree diagram shows all the possible outcomes for 3 hair colors, black, blonde, and brown, and 2 hair lengths, long and short?

1 _____



- 2 The tree diagram shows the choices of juice flavors and sizes available at Andy's Diner. How many possible choices are there?

- F** 3
G 5
H 6
J 9



2 _____

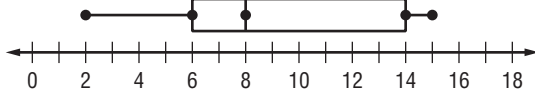
Standards Practice



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 7.5.spi.7 Connect data sets and their graphical representation (i.e., bar graphs, stem-and-leaf plots, box plots, and scatterplots).

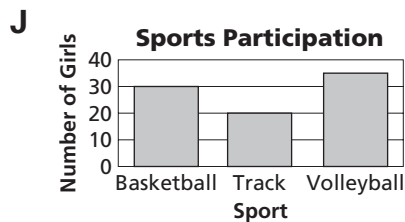
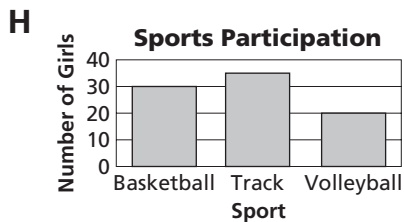
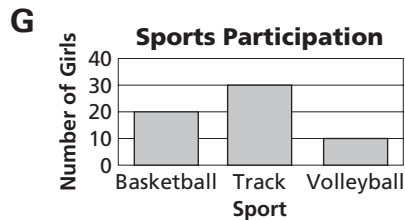
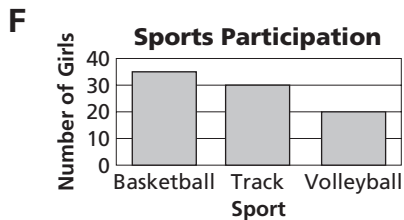
1 Which data set can be represented by this box plot? 1 _____



- A 2, 6, 7, 8, 14, 15, 15
- B 2, 6, 6, 8, 10, 14, 15
- C 2, 5, 6, 8, 10, 14, 15
- D 2, 4, 6, 8, 10, 12, 15

2 Which bar graph represents the data in the table? 2 _____

Sport	Basketball	Track	Volleyball
Girls Participating	30	20	35



3 This stem-and-leaf plot shows the miles walked by students from Belmont University. They were walking for a benefit to help raise funds for those with Parkinson's disease. How many people walked more than 6 miles?

- A 7 people
- B 8 people
- C 11 people
- D 12 people

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

8|1 = 8.1 miles

3 _____

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 7.5.spi.8 Use proportional thinking to make conjectures about results of experiments and simulations.

Use the following information to answer Questions 1 and 2.

Casey is spinning a spinner. Of her first 10 spins, 6 of them land on blue.

1 What is the experimental probability of blue for these spins? 1 _____

A $\frac{4}{10}$

B $\frac{5}{10}$

C $\frac{6}{10}$

D $\frac{7}{10}$

2 If she spins 20 more times, how many times should she expect to spin blue after all 30 spins? 2 _____

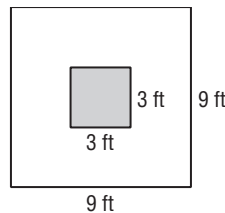
F 12 times

G 15 times

H 18 times

J 22 times

3 Stephanie made this game board. She tossed a beanbag onto the board 22 times. The beanbag landed on the shaded area 3 times. What is the experimental probability of landing on the shaded area? 3 _____



A $\frac{3}{22}$

B $\frac{19}{22}$

C $\frac{22}{3}$

D $\frac{22}{19}$

4 Brendan rolled a pair of number cubes 36 times and rolled a sum of 8 five times. What is the experimental probability of rolling a sum of 8? 4 _____

F $\frac{2}{36}$

G $\frac{4}{36}$

H $\frac{5}{36}$

J $\frac{8}{36}$

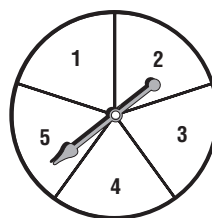
5 What is the theoretical probability of spinning an odd number with this spinner? 5 _____

A $\frac{1}{5}$

B $\frac{2}{5}$

C $\frac{1}{2}$

D $\frac{3}{5}$



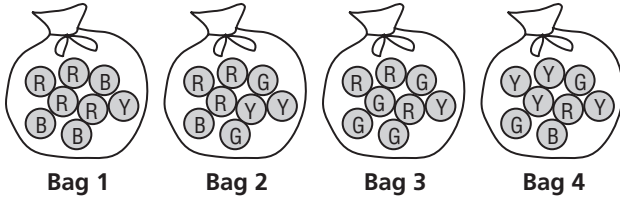
Standards Practice

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 7.5.spi.9 Connect the symbolic representation of a probability to an experiment.

Use the following information to answer Questions 1–3.

Barone has put his collection of red (R), yellow (Y), blue (B), and green (G) marbles into 4 bags as shown. Each bag has 8 marbles.



- 1** For which bag is $P(\text{red}) = 0.5$? **1** _____
- A** Bag 1
B Bag 2
C Bag 3
D Bag 4
- 2** For which bag is $P(\text{blue})$ the least? **2** _____
- F** Bag 1
G Bag 2
H Bag 3
J Bag 4
- 3** For which bag is $P(\text{yellow}) = P(\text{green})$? **3** _____
- A** Bag 1
B Bag 2
C Bag 3
D Bag 4
- 4** A spinner is divided into 5 equal parts numbered 1 through 5. Ted does an experiment by spinning the spinner and he lands on the number 5 four out of ten times. How does the experimental probability of landing on the number 5 compare to the theoretical probability? **4** _____
- F** Less than
G Equal to
H Greater than
J Less than or equal to

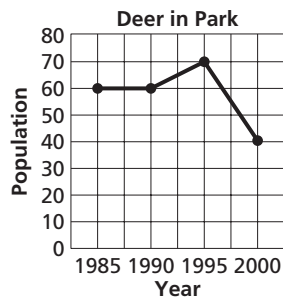
Sample Test



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 Chase runs the 100 meter dash at track meets. He continually tries to improve his time. Following is a list of times in seconds of his last 6 track meets: 15.8, 13.8, 15.2, 14.6, 12.7, and 13.1. Find the median of the set of data. 1 _____
- A** 13.8 s **B** 14.2 s
C 14.6 s **D** 28.4 s

- 2 The graph shows the number of deer in a park between 1985 and 2000. During which time period did the deer population not change?
F 1985–1990
G 1985–1995
H 1990–1995
J 1995–2000

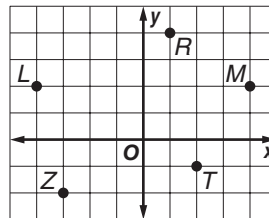


2 _____

- 3 Kellen bought a map of Texas before his vacation. On his map, Dallas is $7\frac{1}{2}$ inches from Houston with a scale of 3 inches = 100 miles. What is the actual distance from Dallas to Houston?
A 233 mi **B** 250 mi
C 300 mi **D** 375 mi

3 _____

- 4 What are the coordinates of point *L* on the coordinate grid?
F (–4, 1)
G (4, 2)
H (–4, 2)
J (2, –1)



4 _____

- 5 The cost of boarding a cat in a kennel depends on the number of days of boarding. Which equation represents the relationship between cost *c* and number of days *d*?

5 _____

Days	2	5	8	12
Cost (\$)	28	70	112	168

- A** $c = d + 26$
B $c = d + 65$
C $c = 14d$
D $c = 14 \div d$



Sample Test (continued)



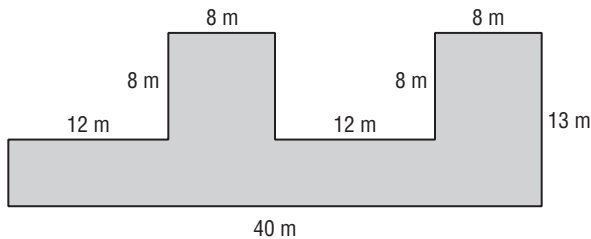
Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

- 6** There are 8 new people starting jobs at a company. Their boss wants them to introduce themselves to each other and as they do, they shake hands. If each of the 8 new employees shake hands with every other new employee, how many handshakes will there be? **6** _____
- F** 16 handshakes
G 28 handshakes
H 36 handshakes
J 64 handshakes

- 7** Which of these is a composite number? **7** _____
- A** 11
B 31
C 51
D 61

- 8** Simplify this expression $(34 + 14) \div 6 - 3(5 - 3)$. **8** _____
- F** 2
G 4
H 7
J 10

- 9** Find the area of the figure. **9** _____



- A** 264 m^2
B 328 m^2
C 520 m^2
D 648 m^2

- 10** A standard showerhead uses about 6 gallons of water per minute. How many fluid ounces is this? **10** _____
- F** 128 fl oz
G 384 fl oz
H 768 fl oz
J 1,536 fl oz

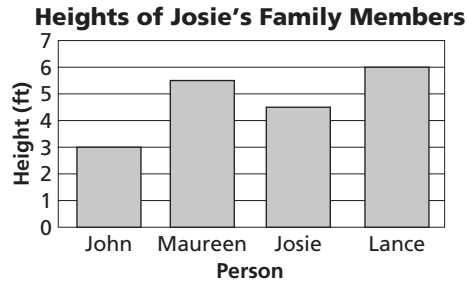


Sample Test (continued)



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** The bar graph displays the heights of all the members of Josie's family. **11** _____
Which 2 family members are closest in height?



- A** Josie and John
B Lance and Josie
C Lance and Maureen
D Maureen and John
- 12** The state of Tennessee is shaped roughly like a parallelogram. The shortest distance between the northern and southern borders is about 113 miles and the northern border is about 448 miles long. Estimate the area of Tennessee. **12** _____
F 11,000 mi² **G** 33,000 mi²
H 40,000 mi² **J** 51,000 mi²
- 13** Which of these is equivalent to 87.5%? **13** _____
A $\frac{4}{5}$ **B** $\frac{3}{16}$
C $\frac{7}{8}$ **D** $\frac{3}{8}$
- 14** One morning as Alexandra gets ready for school in Montana she hears the local weather report state that the temperature is expected to rise 18°F to a high of -6°F during the day. Which equation should she use to find the temperature t now? **14** _____
F $t + 18 = -6$ **G** $t - 18 = -6$
H $t - 6 = 18$ **J** $t - 6 = -18$
- 15** In isosceles triangle NAP , angle A and angle P are congruent and they each measure 47. Find the measure of angle N . **15** _____
A 47
B 86
C 94
D 133



Sample Test (continued)

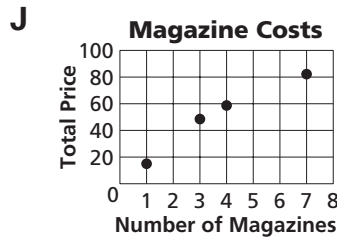
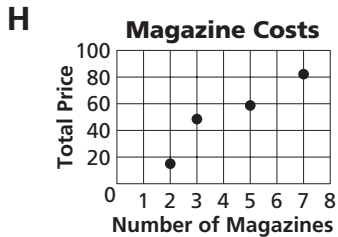
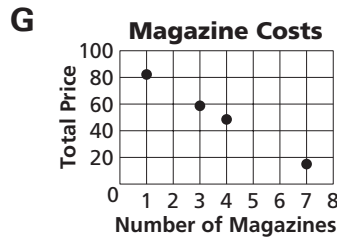
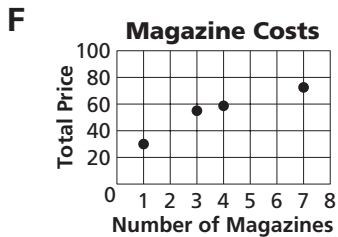


Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

16 The table shows the number of magazines 4 shoppers bought and the prices they paid. Which scatterplot represents the data?

16 _____

Number of Magazines	1	3	4	7
Total Price (\$)	\$15.25	\$48.50	\$58.70	\$82.20



17 Point *A* has coordinates (45, 0) and point *H* has coordinates (92, 0). What is the length of *AH*?

17 _____

- A** 26
- C** 68

- B** 47
- D** 137

18 Which letter on the number line corresponds to -1.5 ?

18 _____



- F** *B*
- H** *H*

- G** *D*
- J** *I*

19 Solve $15 = y - (-7)$.

19 _____

- A** -22
- C** 8

- B** -8
- D** 22

20 Justin went to the store and bought 3 items. The items cost \$3.52, \$0.75 and \$2.20. How much did he spend altogether?

20 _____

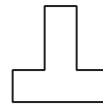
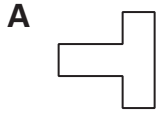
- F** \$6.47
- G** \$6.74
- H** \$7.00
- J** \$7.64



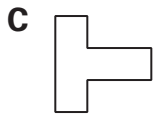
Sample Test (continued)

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.

- 21** Which is the figure at the right after a rotation of 90° counterclockwise?



21 _____



- 22** Diane is an employee at a toy company. She checks toys for defects. Diane checks 300 toy cars and finds 8 defective. What is the experimental probability that a toy car is defective?

F $\frac{1}{300}$

G $\frac{2}{75}$

H $\frac{4}{75}$

J $\frac{16}{200}$

22 _____

- 23** The midpoint of \overline{YZ} is point G . The length of \overline{YG} is 8.2 inches. Find the length of \overline{YZ} .

A 4.1 in.

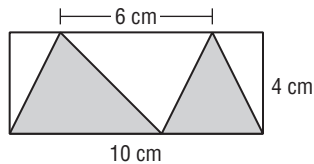
B 6.2 in.

C 8.2 in.

D 16.4 in.

23 _____

- 24** Find the area of the shaded region.



F 8 cm^2

G 12 cm^2

H 20 cm^2

J 32 cm^2

24 _____

- 25** An office equipment rental company rents out its copiers for \$120 a month plus \$0.02 per copy. Ms. Bradley wants to rent a copier for her business but wants to know how many copies she can print and still keep her bill at or below \$300. Which inequality would she use?

A $120 + 0.02c \leq 300$

B $0.02 + 120c < 300$

C $120 + 0.02c > 300$

D $120 + 0.02c \geq 300$

25 _____



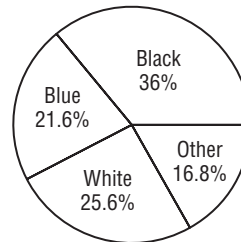
Sample Test (continued)

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** The circle graph displays the results of a survey asking 250 people their favorite color for a vehicle. How many people chose blue as their favorite color for a vehicle?

F 42
G 54
H 64
J 90

Favorite Color for Vehicles



26 _____

- 27** Keith enjoys playing golf at a course in Knoxville. One afternoon, Keith shot an eagle, which is the term for scoring 2 below par on a hole, written as -2 . How would the opposite of 2 below par be written?

A +4
B +2
C -2
D -4

27 _____

- 28** Evaluate the expression $4a - 6f$ when $a = 8$ and $f = -2$.

F -56
G 20
H 40
J 44

28 _____

- 29** When comparing 25.25 and $25\frac{1}{4}$, which statement is true?

A $25.25 > 25\frac{1}{4}$
B $25\frac{1}{4} > 25.25$
C $25.25 < 25\frac{1}{4}$
D $25.25 = 25\frac{1}{4}$

29 _____

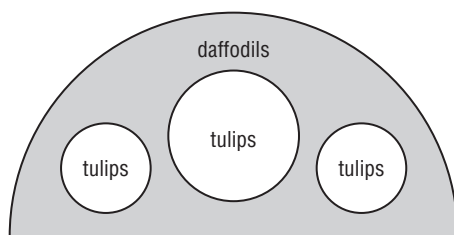
- 30** A triangle has angle measures of 42, 25, and 113. Which term could be used to describe this triangle?

F acute
G isosceles
H obtuse
J right

30 _____

- 31** Mr. Ellis is planning this garden bed for his front yard. Estimate what fraction of the bed will contain daffodils.

31 _____



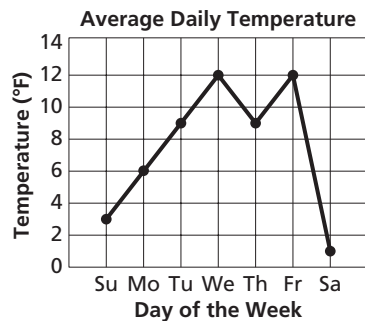
A $\frac{1}{2}$
B $\frac{2}{3}$
C $\frac{7}{8}$
D $\frac{9}{10}$



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.

Use the graph to answer Questions 32 and 33.



32 On which 2 days was the temperature the lowest? 32 _____

- F Monday and Friday
 G Sunday and Saturday
 H Wednesday and Friday
 J Tuesday and Thursday

33 Find the mean temperature for the week. 33 _____

- A 7.4°F B 8.7°F
 C 9°F D 12°F

34 A plane descends at a rate of 30 feet per second as it approaches the airport in Memphis. If the plane is at an altitude of 1,500 feet, how many seconds will it take the plane to reach an altitude of 300 feet? 34 _____

- F 10 s G 40 s
 H 50 s J 60 s

35 Find the area of a rectangle that is 14 feet by 16 feet. 35 _____

- A 60 ft B 60 ft^2
 C 224 ft D 224 ft^2

36 Morgan drew some shapes on her paper. She drew 30 squares, 40 rectangles, 1 circle, 24 triangles, and 30 pentagons. What percent of the shapes she drew were circles? 36 _____

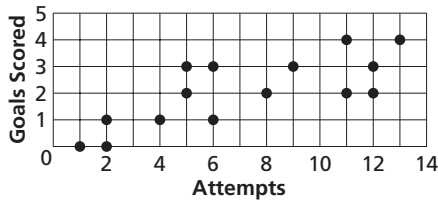
- F 0.8% G 8%
 H 18% J 80%



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.

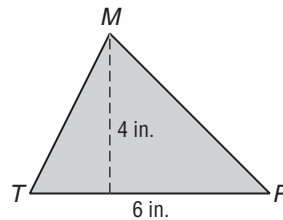
- 37** The graph shows the attempted goals and the goals scored by all of the players on a soccer team. Assuming this trend continues, what would be a good prediction of the number of goals that might be scored by a player who has 15 attempts? **37** _____



- A** 0 **B** 2 **C** 5 **D** 9

- 38** Find the area of $\triangle TMR$. **38** _____

- F** 5 in^2
G 10 in^2
H 12 in^2
J 24 in^2



- 39** The number of breaths that Laura takes for different numbers of minutes are shown in this table. How many breaths does a Laura take in 30 minutes? **39** _____

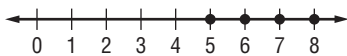
Number of Minutes	1	3	7	18
Number of Breaths	16	48	112	288

- A** 320 **B** 400
C 448 **D** 480

- 40** A trapezoid has base lengths of 8 centimeters and 6 centimeters and a height of 4 centimeters. Find the area of the trapezoid. **40** _____

- F** 8 cm^2 **G** 14 cm^2
H 18 cm^2 **J** 28 cm^2

- 41** The whole numbers that are graphed would satisfy which of the following inequalities? **41** _____



- A** $x > 5$ **B** $x < -4$
C $x > 4$ **D** $x < 4$



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** Audra attends a soccer tournament in Jackson with teams from several other towns in the surrounding area. The loser of each game is eliminated. How many games will be played if there are 32 teams competing? **42** _____

F 16 games **G** 31 games
H 63 games **J** 64 games

- 43** If Jermaine spends $2\frac{1}{4}$ hours more at the camp, he will complete 9 hours of camp counseling. Which equation would be used to find how many hours h he has worked as a counselor so far? **43** _____

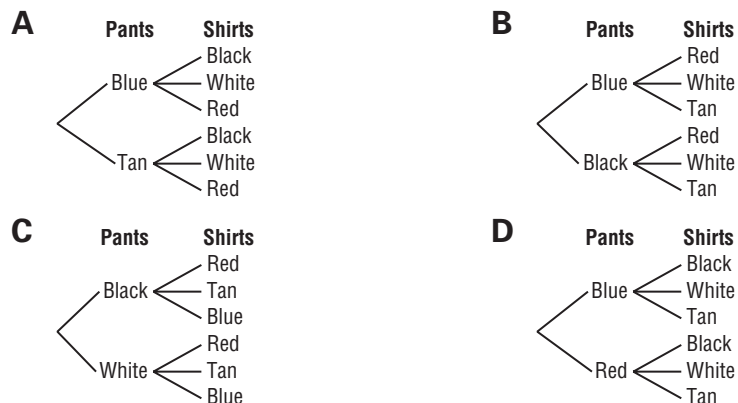
A $h + 2\frac{1}{4} = 9$ **B** $h - 2\frac{1}{4} = 9$
C $h \div 2\frac{1}{4} = 9$ **D** $2\frac{1}{4} \times h = 9$

- 44** The table shows the amount of time Dave practiced pitching each week and the number of strikes he threw out of 50 pitches each week. Which of the following would most likely be the number of strikes thrown out of 50 pitches if he practiced 3 hours a week? **44** _____

Week	Hours of Practice	Number of Strikes (50)
1	1	10
2	2	18
3	4	37
4	6	47

F 6 strikes **G** 15 strikes
H 19 strikes **J** 28 strikes

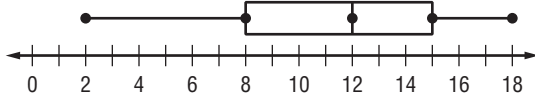
- 45** Which of the following would be the correct tree diagram if choosing among blue or black pants and red, white, or tan shirts? **45** _____



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.

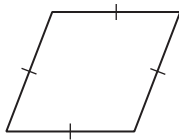
- 46** Which data set could be represented by the box-and-whisker plot? **46** _____



- F** 2, 8, 8, 11, 12, 14, 14, 16, 18
G 2, 2, 8, 11, 12, 15, 16, 18, 18
H 2, 3, 4, 8, 12, 13, 17, 18, 18
J 2, 8, 12, 13, 14, 15, 16, 17, 18
- 47** Start with 4 and add 6 repeatedly. What are the first 5 numbers in the number pattern? **47** _____
- A** 6, 10, 14, 18, 22
B 4, 8, 12, 16, 20
C 4, 6, 12, 18, 24
D 4, 10, 16, 22, 28

- 48** Lydia bought a bag of baby carrots and decided to share them with her 5 friends. She counted the carrots in the bag before distributing them and found there were 47 altogether. How many carrots would Lydia have left over after distributing them evenly? **48** _____
- F** 3 **G** 4
H 5 **J** 6

- 49** Which term would be used to classify this quadrilateral? **49** _____



- A** rhombus **B** rectangle
C trapezoid **D** square
- 50** Data were collected on the color of the shirts worn by the students in a math class. 8 wore green, 5 wore blue, 3 wore red and 10 wore white. If a student was chosen at random, which of the following was $P(\text{blue shirt})$? **50** _____

- F** $\frac{3}{26}$ **G** $\frac{5}{26}$
H $\frac{8}{26}$ **J** $\frac{10}{26}$

