Student Name _____

Teacher Name _____

School _____

System _____

Tennessee Comprehensive Assessment Program

Achievement Test ~ Grade 6

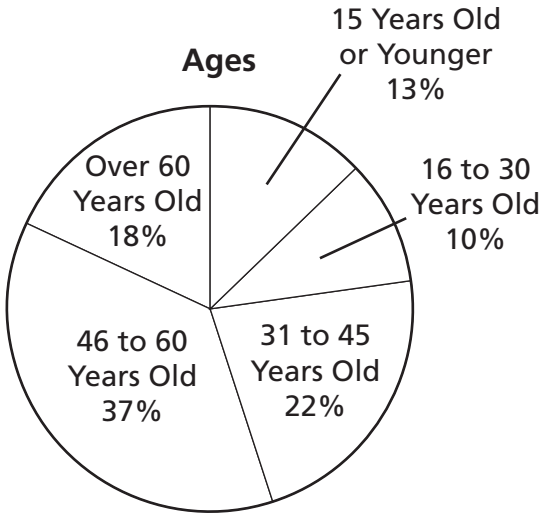
Item Sampler

Mathematics

Reporting Category: **1 Mathematical Processes**

Performance Indicator: **0606.1.1 Make conjectures and predictions based on data.**

1 The ages of people at a baseball game are shown in the graph.



About 10,000 people are at the baseball game. Based on the information in the graph, what is the closest prediction of the number of people at the baseball game who are 30 years old or younger?

A 1,000

B 1,300

C 2,300

D 3,200

Go On ▶

Reporting Category: 1 Mathematical Processes

Performance Indicator: 0606.1.2 Judge the reasonableness of the results of rational number estimates and/or computations.

2 Jordan placed 846 photographs into 12 photo albums. She put about the same number of photographs in each album. Which is the best estimate of the number of photographs Jordan put in each album?

F 40

G 45

H 55

J 70

Reporting Category: 1 Mathematical Processes

Performance Indicator: 0606.1.3 Use concrete, pictorial, and symbolic representation for integers.

3 The temperature at 3:00 P.M. was 65° Fahrenheit. By 9:00 P.M., the temperature had decreased by 27 degrees. Which integer best represents the temperature change, in degrees Fahrenheit, from 3:00 P.M. to 9:00 P.M.?

A −38

B −27

C 27

D 38

Reporting Category: **1 Mathematical Processes**

Performance Indicator: **0606.1.4 Select the representation that models one of the arithmetic properties (commutative, associative, or distributive).**

4 Which equation below represents the commutative property?

F $3 + (4 + 6) = 3 + (6 + 2 + 2)$

G $3 \cdot 4 \cdot 6 = 3 \cdot 6 \cdot 4$

H $3 + (4 + 6) = (3 + 4) + 6$

J $3(4 + 6) = 3 \cdot 4 + 3 \cdot 6$

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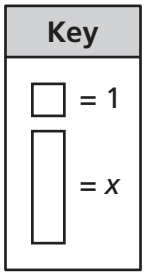
Reporting Category: 1 Mathematical Processes

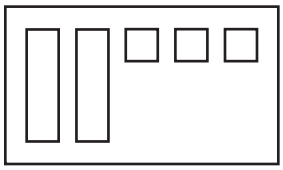
Performance Indicator: 0606.1.5 Model algebraic expressions using algebra tiles.

5 Look at the key below.

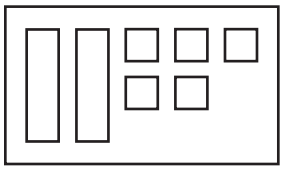


Which model below represents $2x + 3$?

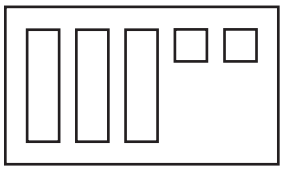
A



C



B



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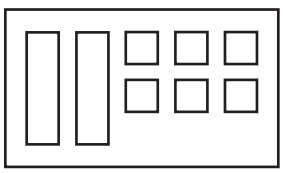


Reporting Category: 2 Number and Operations

Performance Indicator: 0606.2.1 Solve problems involving the multiplication and division of fractions.

6 Roberto is making cookies using a recipe. He will use $\frac{1}{2}$ of every measurement listed in the recipe. If the recipe requires $\frac{3}{4}$ cup of water, how much water should Roberto use?

F $\frac{3}{2}$ cups

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

H $\frac{1}{2}$ cup

J $\frac{3}{8}$ cup

Go On ▶

Reporting Category: 2 Number and Operations

Performance Indicator: 0606.2.2 Solve problems involving the addition, subtraction, multiplication, and division of mixed numbers.

7 A recipe for 1 cake requires $1\frac{3}{4}$ cups of water. How many cups of water are required to make 5 cakes using this recipe?

A $8\frac{3}{4}$ cups

B $6\frac{3}{4}$ cups

C $5\frac{3}{4}$ cups

D $3\frac{1}{4}$ cups

Reporting Category: 2 Number and Operations

Performance Indicator: 0606.2.3 Solve problems involving the addition, subtraction, multiplication, and division of decimals.

8 Danielle had $33.58. She spent $19.99 of this money on art supplies. How much money should Danielle have left?

F $53.57

G $26.41

H $14.58

J $13.59

Reporting Category: 2 Number and Operations

Performance Indicator: 0606.2.4 Solve multi-step arithmetic problems using fractions, mixed numbers, and decimals.

9 Coretta made 7 pies for a family reunion. During the reunion, $3\frac{1}{4}$ of the pies were eaten. Coretta took $1\frac{1}{2}$ pies to work for her friends. How many pies were left?

A $2\frac{1}{4}$

B $2\frac{2}{3}$

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

D $5\frac{1}{2}$

Reporting Category: 2 Number and Operations

Performance Indicator: 0606.2.4 Solve multi-step arithmetic problems using fractions, mixed numbers, and decimals.

10 Ivan had $28.50 saved for gardening supplies. He spent $13.75 for plants and $6.99 for plant food. He wants to spend $15.99 on flower bulbs. Based on the amount he has left, how much more money will he need?

F $7.76

G $8.23

H $20.74

J $23.75

Go On ▶

Reporting Category: **2 Number and Operations**

Performance Indicator: **0606.2.5 Transform numbers from one form to another (fractions, decimals, percents, and mixed numbers).**

11 Mr. Kincaid has a piece of pipe that is 3.08 meters long. Which length is equivalent to 3.08 meters?

A $3\frac{2}{25}$ meters

B $3\frac{4}{25}$ meters

C $3\frac{1}{5}$ meters

D $3\frac{4}{5}$ meters

Reporting Category: **2 Number and Operations**

Performance Indicator: **0606.2.6 Solve problems involving ratios, rates and percents.**

12 Joey solves math problems at a rate of about 3 problems every 7 minutes. He continues to work at the same rate. How many minutes should Joey take to solve 45 math problems?

F 15 minutes

G 21 minutes

H 105 minutes

J 135 minutes

Reporting Category: 2 Number and Operations

Performance Indicator: 0606.2.6 Solve problems involving ratios, rates and percents.

13 The area of the floor in Rogelio's family room is 400 square feet. A rug covers 80 square feet of the floor. What percent of the family room floor is covered by the rug?

A 5%

B 20%

C 50%

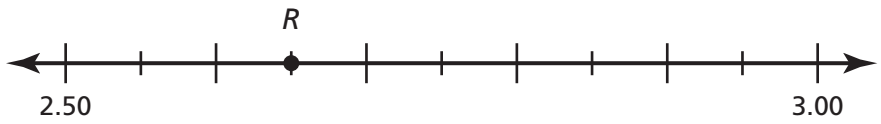
D 80%

Reporting Category: 2 Number and Operations

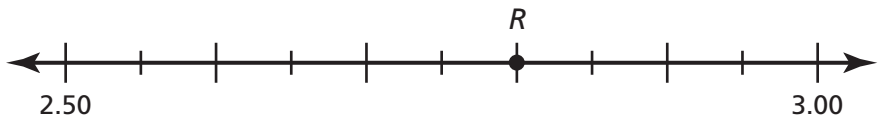
Performance Indicator: 0606.2.7 Locate positive rational numbers on the number line.

14 Which number line shows Point *R* located closest to 2.85?

F



G



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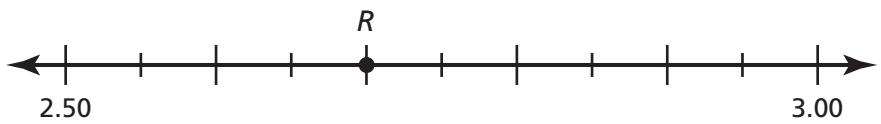

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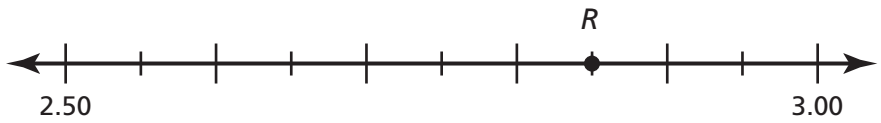

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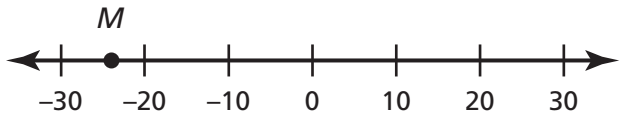
Reporting Category: **2 Number and Operations**

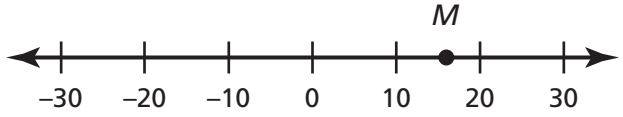
Performance Indicator: **0606.2.8 Locate integers on the number line.**

15 Mollie discovered a fossil at 24 feet below sea level. Which number line best shows Point *M* at −24?

A



B



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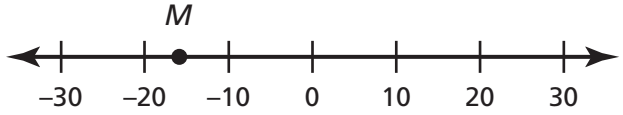
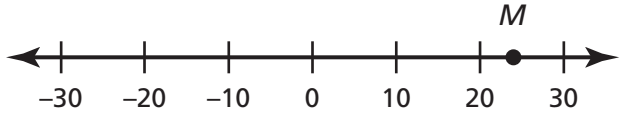


D



Reporting Category: 3 Algebra

Performance Indicator: 0606.3.3 Write equations that correspond to given situations or represent a given mathematical relationship.

16 The list below shows the items Seth bought at a grocery store.

- 1 gallon of milk for $3.88
- 1 loaf of bread for $1.99
- 1 dozen eggs for $1.59

He paid for these items with a $10 bill. Which equation could be used to find c, the total amount of change, in dollars, Seth should receive?

F $c = 10 - (3.88 \times 1.99 \times 1.59)$

G $c = 10 + (3.88 + 1.99 + 1.59)$

H $c = 10 + (3.88 - 1.99 - 1.59)$

J $c = 10 - (3.88 + 1.99 + 1.59)$

Reporting Category: 3 Algebra

Performance Indicator: 0606.3.4 Rewrite expressions to represent quantities in different ways.

17 Which expression is equivalent to $7(6y + 4)$?

A $(7 \cdot 6)y + 4$

B $7y(6 + 4)$

C $(7 \cdot 6)y + (7 \cdot 4)$

D $(7 \cdot 6)y + (7 \cdot 4)y$

Go On ▶

Reporting Category: **3 Algebra**

Performance Indicator: **0606.3.5 Translate between verbal expressions/ sentences and algebraic expressions/equations.**

18 Look at the expression below.

$$\frac{4n}{5} - 7$$

Which of these has the same meaning as this expression?

F seven less than the sum of four times a number *n* and five

G the difference between seven and five less than four times a number *n*

H seven less than the quotient when four times a number *n* is divided by five

J the difference between seven and the quotient when five is divided by four times a number *n*

Reporting Category: **3 Algebra**

Performance Indicator: **0606.3.6 Solve two-step linear equations using number sense, properties, and inverse operations.**

19 Look at the equation below.

$$2x - 1 = 5$$

What value of *x* makes the equation true?

A 2

B 3

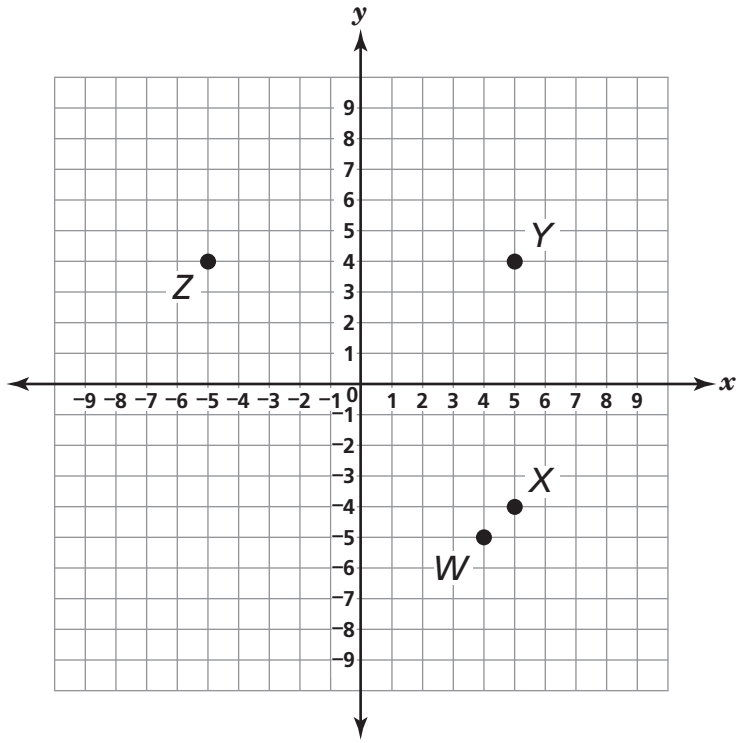
C 8

D 12

Reporting Category: 3 Algebra

Performance Indicator: 0606.3.9 Graph ordered pairs of integers in all four quadrants of the Cartesian coordinate system.

20 Which point is located at $(-5, 4)$ on the grid below?



F Point *W*

G Point *X*

H Point *Y*

J Point *Z*

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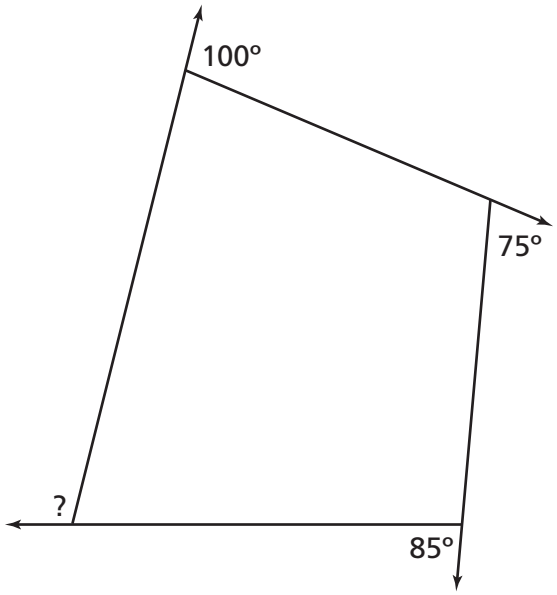
Reporting Category: 4 Geometry and Measurement

Performance Indicator: 0606.4.2 Find a missing angle measure in problems involving interior/exterior angles and/or their sums.

21 What is the measure of the missing exterior angle for the figure shown below?



A 80°

B 100°

C 160°

D 260°

Reporting Category: 4 Geometry and Measurement

Performance Indicator: 0606.4.4 Calculate with circumferences and areas of circles.

22 A circle has a diameter of 30 centimeters (cm). Which measurement is closest to the area of the circle?

$A = \pi r^2$
$\pi \approx 3.14$

F 47.1 cm^2

G 188.4 cm^2

H 706.5 cm^2

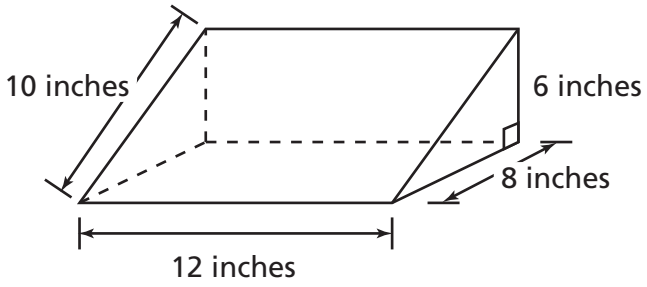
J 2,826 cm^2

Go On ▶

Reporting Category: 4 Geometry and Measurement

Performance Indicator: 0606.4.5 Determine the surface area and volume of prisms, pyramids and cylinders.

23 The picture below shows the dimensions of a display cabinet shaped like a triangular prism.



Surface Area = sum of the area of the faces

Area of Rectangle = lw

Area of Triangle = $\frac{1}{2}bh$

What is the surface area of the display cabinet?

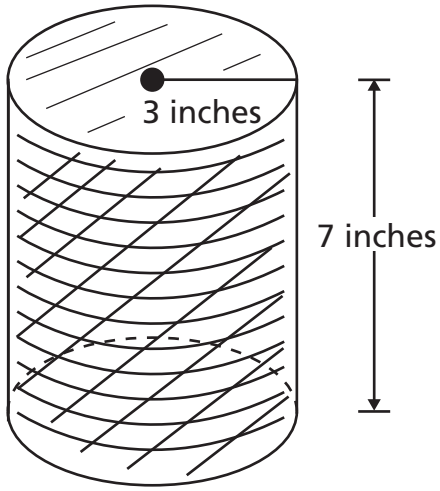
A 156 square inches

B 216 square inches

C 312 square inches

D 336 square inches

24 The picture below shows a cylinder-shaped basket with a radius of 3 inches and a height of 7 inches.



Volume $= \pi r^2 h$

$\pi \approx 3.14$

Which is closest to the volume of the basket?

F 197.82 cubic inches

G 131.88 cubic inches

H 65.94 cubic inches

J 28.26 cubic inches

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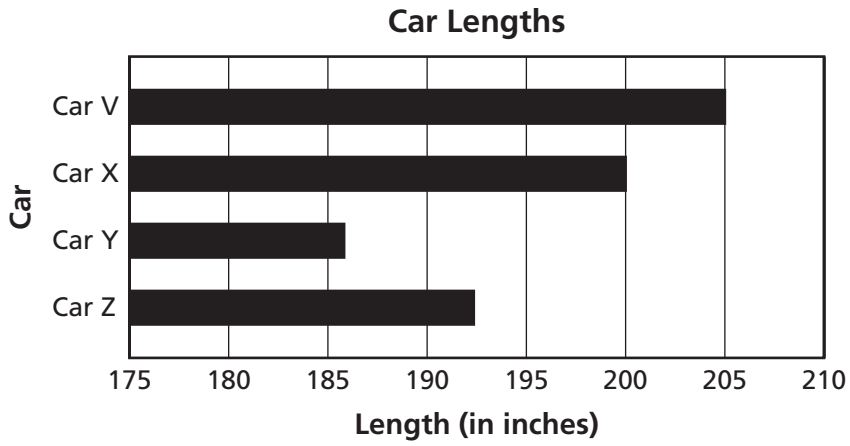
Reporting Category: 5 Data Analysis, Statistics and Probability

Performance Indicator: 0606.5.2 Identify features of graphs that may be misleading.

25 The lengths of 4 cars are displayed on the graph.



Which feature of the graph may be misleading?

A The scale does not start at zero.

B The values on the horizontal axis increase by 5.

C The bars are horizontal instead of vertical.

D The bars are not in order from longest to shortest.

Reporting Category: 5 Data Analysis, Statistics and Probability

Performance Indicator: 0606.5.3 Determine whether or not a sample is biased.

26 A town mayor wants to know if the residents of a town are in favor of building a new football stadium. On Saturday, he randomly surveyed 50 male residents of the town to see if they were in favor of the new stadium. Which sentence best explains why this sample may be biased?

F The sample was taken on only one day.

G The sample included only males in the survey.

H The sample included residents of only one town.

J The sample did not include all the males in the town.

STOP

Math
Answer Key

1	C
2	J
3	B
4	G
5	A
6	J
7	A

8	J
9	A
10	G
11	A
12	H
13	B
14	J

15	A
16	J
17	C
18	H
19	B
20	J
21	B

22	H
23	D
24	F
25	A
26	G