VIRGINIA STANDARDS OF LEARNING

Spring 2009 Released Test

GRADE 6 MATHEMATICS

Form M0119, CORE 1
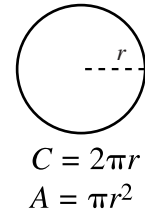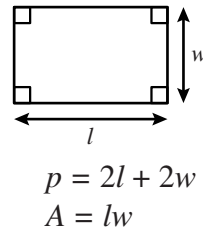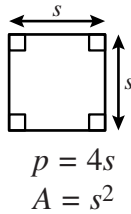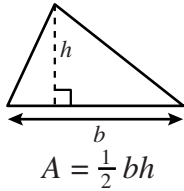
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Grade 6 Mathematics Formula Sheet

Geometric Formulas

$A = \frac{1}{2} bh$

$p = 4s$
$A = s^2$

$p = 2l + 2w$
$A = lw$

$C = 2\pi r$
$A = \pi r^2$

Pi

$\pi \approx 3.14$

$\pi \approx \frac{22}{7}$

Abbreviations

milligram	mg	ounce	oz	area	A
gram	g	pound	lb	perimeter	p
kilogram	kg	quart	qt	circumference	C
milliliter	mL	gallon	gal.		
liter	L	inch	in.	year	yr
kiloliter	kL	foot	ft	month	mon
millimeter	mm	yard	yd	hour	hr
centimeter	cm	mile	mi.	minute	min
meter	m	square inch	sq in.	second	sec
kilometer	km	square foot	sq ft		
square centimeter	cm^2	cubic inch	cu in.		
cubic centimeter	cm^3	cubic foot	cu ft		

Directions

Read each question and choose the best answer.

SAMPLE

Which is less than 1.064?

A   1.159
B   1.059
C   1.171
D   1.071

1   **3.2 ÷ 0.2 =**

   A 2

   B 16

   C 64

   D 160

2 **Which is equal to $\dfrac{3}{2} \times \dfrac{3}{4}$?**

   F 2

   G $1\dfrac{1}{8}$

   H $\dfrac{1}{2}$

   J $\dfrac{1}{8}$

GO ON

3   The prices of the items in Alana's grocery cart are pictured.

Soup — $2.29

Bread — $1.59

Juice — $2.29

Milk — $2.89

Alana has $10.00 to spend on the items. Which list of items could Alana purchase with her $10.00 ?

A   4 cans of soup, 1 loaf of bread, and 1 bottle of juice

B   1 loaf of bread, 3 bottles of juice, and 2 cans of soup

C   1 loaf of bread, 3 cans of soup, and 1 container of milk

D   2 cans of soup, 1 bottle of juice, and 1 container of milk

4   **Antonio moved boxes that weighed 26.5 pounds, 34.2 pounds, and 45.8 pounds. Which is *closest* to the number of pounds Antonio moved all together?**

F   100 pounds

G   107 pounds

H   115 pounds

J   200 pounds

5 Greg and Sam ordered a pizza for lunch. Greg ate $\frac{3}{4}$ of the pizza, and Sam ate $\frac{1}{8}$ of the pizza. How much of the whole pizza was eaten by Greg and Sam?

A $\frac{1}{3}$

B $\frac{1}{2}$

C $\frac{5}{8}$

D $\frac{7}{8}$

6 Carl needs $2\frac{2}{3}$ cups of flour to make a certain cake. He only has $\frac{3}{8}$ cup of flour in the pantry. How many more cups of flour does Carl need for the cake?

F $2\frac{1}{24}$ cups

G $2\frac{1}{5}$ cups

H $2\frac{7}{24}$ cups

J $2\frac{5}{11}$ cups

GO ON

7 Mrs. Chan purchased 2 oranges at lunch every day for 9 days. The oranges cost $0.49 each. To the nearest dollar, how much did Mrs. Chan pay for all the oranges?

A $1

B $5

C $9

D $18

8 Alexis needs to buy 300 sheets of construction paper. The office supply store sells construction paper in the following packages.

Paper Purchase

Package	Number of Sheets	Price
W	50	$4.50
X	75	$5.10
Y	100	$10.75
Z	150	$12.25

Which of the following is the *least* expensive way for Alexis to buy 300 sheets of construction paper?

F 6 packages of paper *W*

G 4 packages of paper *X*

H 3 packages of paper *Y*

J 2 packages of paper *Z*

9 $0.3\overline{)0.312}$

    A   14

    B   1.4

    C   1.04

    D   0.104

10   **Karl earns $8.50 per hour at his part-time job. Last week he worked 18 hours. This week he worked 14 hours. What is the total amount of money that Karl earned for working these two weeks?**

    F $119

    G $153

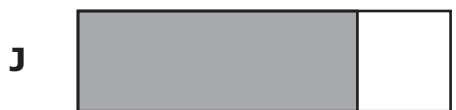   **H** $261

    J $272

STOP

Do not turn the page until you are told.

11 Which of the following is the greatest common factor of 6 and 10 ?

    A 2

    B 10

    C 30

    D 60

12 Which of the following figures most closely shows 25% shaded?

F

G

H

J

13 Which of the following is true?

    A $^-10 > {}^-20$

    B $^-50 > 45$

    C $^-30 < {}^-35$

    D $25 < {}^-45$

GO ON

14 **Which statement best describes the number 22 ?**

    F   It is a composite number.

    G It is a prime number.

    H It is both a prime and a composite number.

    J   It is neither a prime nor a composite number.

15 **Which is true?**

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

    B $2\frac{3}{5} > 2\frac{2}{3}$

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

    D $2\frac{2}{3} > 2\frac{3}{10}$

16 **Which number is equivalent to 30%?**

    F   0.03

    G $\frac{3}{10}$

    H $\frac{1}{3}$

    J   30.0

17

Calculators in
Mrs. Camp's Class

Color	Number
Red	14
Blue	8
Yellow	6

According to the table, which shows the ratio of the number of red calculators to the number of blue calculators?

A $\dfrac{14}{8}$

B $\dfrac{8}{14}$

C $\dfrac{14}{28}$

D $\dfrac{8}{20}$

18 Which are multiples of both 4 and 6 ?
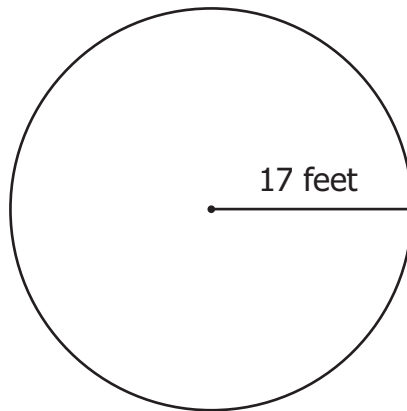
    F   20 and 24

    G   18 and 20

    H   12 and 18

    J   12 and 24

19 Logan needs to order a cover for his swimming pool. The circular swimming pool has a radius of 17 feet.

17 feet

Which is *closest* to the number of square feet needed to completely cover the pool?

A 106.76

B 289

C 907.46

D 1,156

20 Andrea is buying a rectangular rug that is 3 feet wide and 4 feet long. What is the total area that the rug will cover?

F 12 square feet

G 14 square feet

H 24 square feet

J 28 square feet
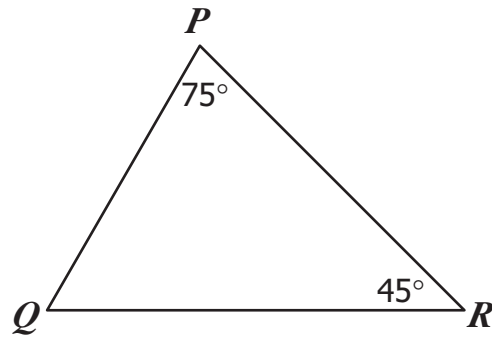
Which correctly describes triangle PQR ?

A   Obtuse

B   Acute

C   Equilateral

D   Isosceles

22 **Which appears to be an obtuse triangle?**

F
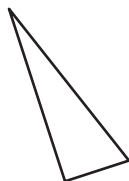

G

H

J

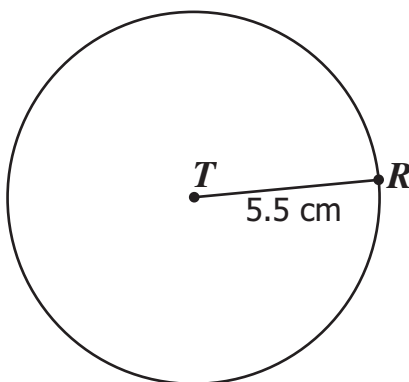**23** **Which is equivalent to 1 liter?**

A   25 milliliters

B   100 milliliters

C   250 milliliters

D   1,000 milliliters

24 **Which of the following measurements is *closest* to 1 ton?**

    F   1,002 pounds

    G 1,902 pounds

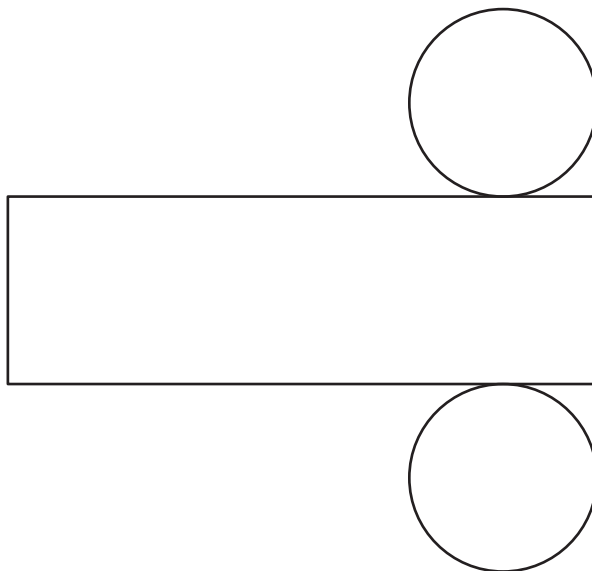   **H** 1,998 pounds

    J   2,505 pounds

25 **In the circle shown, Point T is the center of the circle and Point R is on the circle.**

Which is closest to the circumference of circle T ?

    A 15.70 cm

    B 17.27 cm

    C 31.40 cm

    D 34.54 cm

26 Mrs. Meyer folded the following figure to make a three-dimensional shape.


If no parts overlapped and the entire figure was used, which *best* represents the shape Mrs. Meyer made?
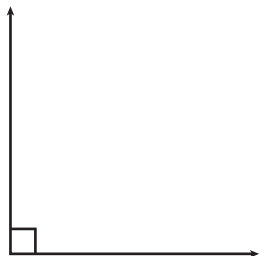
F Cone

G Rectangular prism

H Square pyramid

J Cylinder

27 Susan has a rectangular garden that measures 20 feet by 10 feet. What is the *least* amount of fencing that she needs to buy in order to enclose the garden?

A 30 feet

B 60 feet

C 80 feet

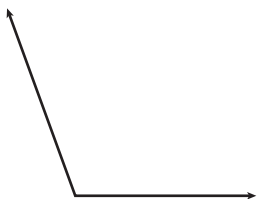**D** 200 feet

28 Which of the following angles measures 180°?

F
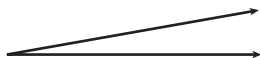
G

H

J

29 Daryl can jump $2\frac{1}{2}$ yards. Sarah can jump 8 feet, and Michelle can jump

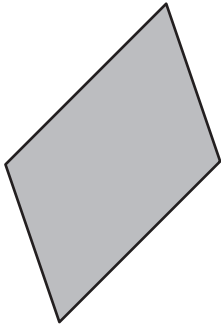72 inches. Which statement is true?

A   Sarah jumps the farthest.

B   Daryl jumps the farthest.

C   Michelle jumps farther than Daryl.

D   Sarah and Michelle jump the same distance.

30 **Pictured is a figure from the cover of Kreig's CD case.**

Four more figures from Kreig's CD case are shown below. Which appears to be congruent to the figure above?
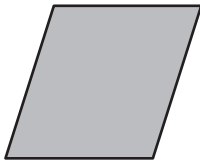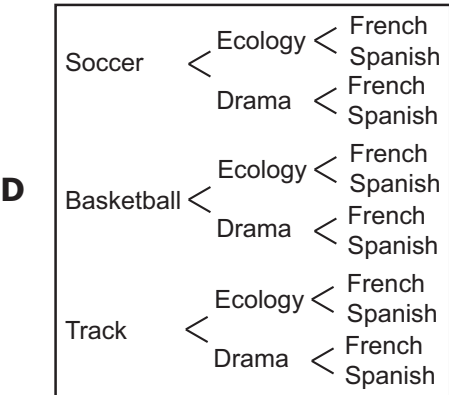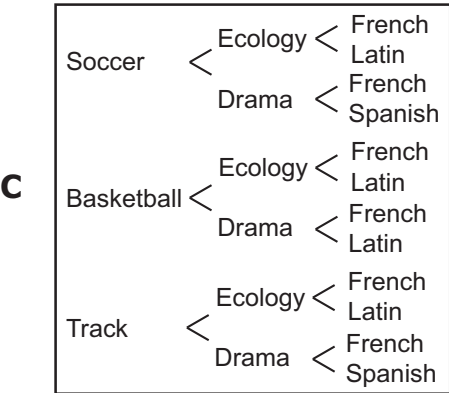
F

G

H

J

31 Students at Wilson Middle School must choose one elective from each group in the table.

Middle School Electives

Sport	Clubs	Language
Soccer	Ecology	French
Basketball	Drama	Spanish
Track		

Which tree diagram shows all possible combinations of choosing one elective from each group?

A

Soccer
- Ecology — French, Spanish
- Drama — French, Spanish

Track
- Ecology — French, Spanish
- Drama — French, Spanish

B

Soccer
- Ecology — French, Spanish
- Drama — French, Spanish

Basketball
- Ecology — French, Spanish
- Drama — French, Spanish

Track — Ecology — Spanish

C

Soccer
- Ecology — French, Latin
- Drama — French, Spanish

Basketball
- Ecology — French, Latin
- Drama — French, Latin

Track
- Ecology — French, Latin
- Drama — French, Spanish

D

Soccer
- Ecology — French, Spanish
- Drama — French, Spanish

Basketball
- Ecology — French, Spanish
- Drama — French, Spanish

Track
- Ecology — French, Spanish
- Drama — French, Spanish

32 A deck of 50 cards for a math game has 9 red cards, 13 blue cards, 18 green cards, and 10 yellow cards. What is the probability that a card randomly selected from the deck will be a blue card?

F 13%

G 26%

H 74%

J 87%

33 Look at the table.

Lunches Sold Last Week

Day	Number Sold
Monday	121
Tuesday	111
Wednesday	108
Thursday	111
Friday	139

What was the mean number of lunches sold last week?

A 105

B 111

C 118

D 130

34 **This stem-and-leaf plot shows the high temperatures in Richmond for two weeks.**

**High Temperatures
in Richmond (°F)**

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

Key
9|2 means 92

Which of the following is a *true* conclusion based on the data in the stem-and-leaf plot?

F The range of the temperatures was 22°F.

G The temperature was 80°F for 3 days.

H The temperature was at least 57°F every day.

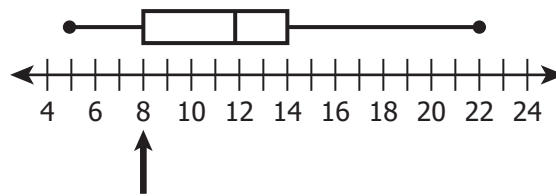**J** The temperature was greater than 70°F exactly 6 times.

35 **What is the median of the following list of numbers?**

33, 21, 42, 19, 42, 12

A 26

B 27

C 30

D 42

36 Holly drew a box-and-whisker plot to display the number of days her classmates were out of town over the summer.

The arrow is most likely pointing to the —

F lower extreme

G upper extreme

H upper quartile

J lower quartile

37 Look at the table.

Miles Driven by Pizza Trucks for Seven Days

Day	Number of Miles Driven
Thurs.	485
Fri.	392
Sat.	373
Sun.	287
Mon.	319
Tues.	287
Wed.	304

What is the range for the number of miles driven?

A 181

B 198

C 287

D 319

38 Ivan has a fair number cube numbered 1 through 6. He will roll the cube one time. What is the probability that the number shown on the top face is a 2 ?

F $\dfrac{1}{6}$

G $\dfrac{1}{3}$

H $\dfrac{2}{3}$

J $\dfrac{5}{6}$

39 The first four figures in a pattern are shown.

If the pattern continues by adding another row and column of dots to the previous group, how many dots will be in the next group?

A 30

B 35

C 36

D 40

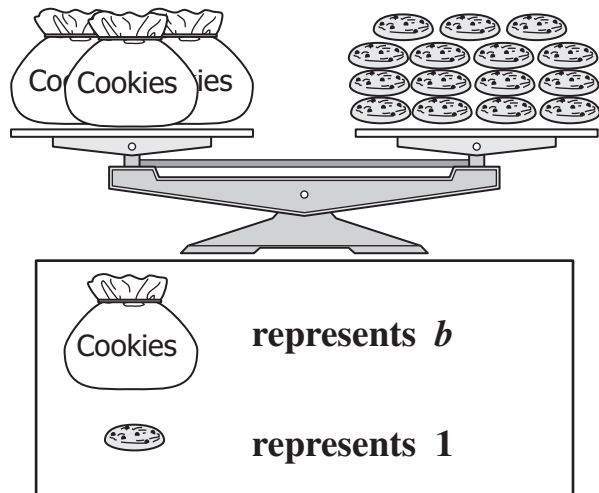**40** **Which shows 72,000,000 written in scientific notation?**

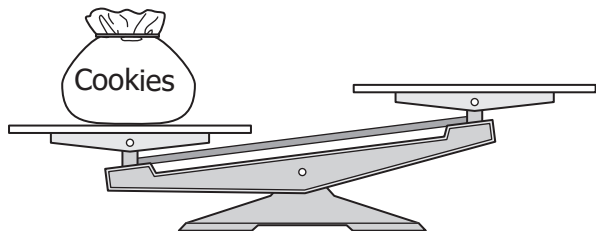   **F** 0.72×10^6

   G 7.2×10^6

   H 7.2×10^7

   J 72×10^7

41 **The scale below is balanced.**

Cookies represents b

🍪 represents 1

Using the above representations, which could be placed on the right side of the following scale to make it balanced?

A 🍪🍪🍪🍪🍪🍪
🍪🍪🍪🍪🍪🍪
🍪🍪🍪🍪🍪🍪

B 🍪🍪🍪🍪🍪
🍪🍪🍪🍪🍪
🍪🍪🍪🍪🍪

C 🍪

D 🍪🍪🍪🍪🍪

42 Solve for m:

$$2m = 42$$

F $m = 21$
G $m = 40$
H $m = 44$
J $m = 84$

43 Which word best describes the following?

$$h - 6 = 14$$

A Equation
B Term
C Coefficient
D Variable

44 What rule describes the sequence shown?

$$64, 16, 4, 1, \ldots$$

F Multiply by 4
G Subtract 48
H Divide by 4
J Add 3

GO ON

45 What is the coefficient in the number sentence $8x = 16$?

A x

B 8

C $8x$

D 16

46 What is a square root of 100 ?

F 50

G 25

H 10

J 4

47 Which pattern follows the rule below?

Divide by 3

A 105, 35, 32, 23, 20

B 108, 36, 18, 9, 3

**C** 120, 90, 60, 30, 10

D 162, 54, 18, 6, 2

48 **John found the solution of $14 + n = 84$ in one step by —**

    F   adding 14 to both sides of the number sentence

    G   dividing both sides of the number sentence by 14

    H   multiplying both sides of the number sentence by 14

    J   subtracting 14 from both sides of the number sentence

49 **Which of the following is equivalent to 2^3 ?**

    A $2 \cdot 3$

    B $3 \cdot 3$

    C $2 \cdot 2 \cdot 2$

    D $2 \cdot 2 \cdot 2 \cdot 2$

50 **Look at the equation mat.**

Key: $\bigcirc = 1$, cup $= x$
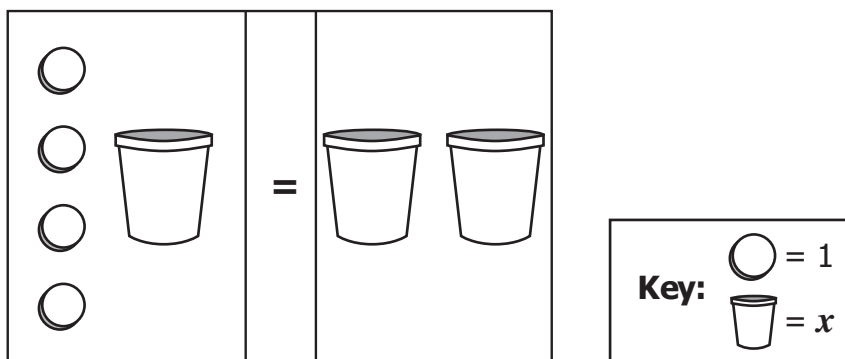
What is the value of x ?

    F   1

    G   2

    H   4

    J   6

STOP