VIRGINIA STANDARDS OF LEARNING

Spring 2006 Released Test

GRADE 6 MATHEMATICS

CORE 1

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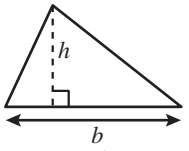
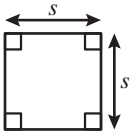
Grade 6 Mathematics Formula Sheet

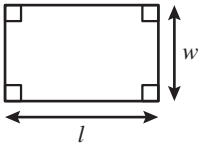
Geometric Formulas



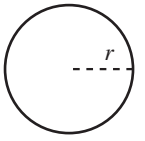
$A = \frac{1}{2}bh$



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



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



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

Pi

$\pi \approx 3.14$

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

Abbreviations

milligram	mg
gram	g
kilogram	kg
milliliter	mL
liter	L
kiloliter	kL
millimeter	mm
centimeter	cm
meter	m
kilometer	km
square centimeter	cm^2
cubic centimeter	cm^3

ounce	oz
pound	lb
quart	qt
gallon	gal.
inch	in.
foot	ft
yard	yd
mile	mi.
square inch	sq in.
square foot	sq ft
cubic inch	cu in.
cubic foot	cu ft

area	*A*
perimeter	*p*
circumference	*C*

year	yr
month	mon
hour	hr
minute	min
second	sec

DIRECTIONS
Read and solve each question. Then mark the space on your answer document for the best answer.

SAMPLE

One hundred sixth-grade students were asked to name one favorite color. The table shows the results.

Favorite Colors

Color	Number of Students
Blue	28
Red	21
Purple	11
Green	11
Black	29

What percent of the students named blue?

A 28%
B 29%
C 50%
D 57%

1 Jamal walked $\frac{3}{4}$ mile yesterday morning and $\frac{1}{8}$ mile yesterday afternoon. What was the total distance walked by Jamal?

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

2 Mrs. Dinato remembered the area of the top of her rectangular table was between 1,500 and 2,000 square inches. Which could be the dimensions of her table?

F 72 in. $\times$ 36 in.
G 60 in. $\times$ 30 in.
H 40 in. $\times$ 30 in.
J 18 in. $\times$ 32 in.

GO ON

3 **One batch of Derrick's pancake recipe takes $2\frac{3}{4}$ cups of milk. If Derrick makes 3 batches of his pancake recipe, how many cups of milk will he need?**

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

B $8\frac{1}{4}$ cups

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

D $6\frac{1}{4}$ cups

4 **$0.084 \div 0.6 =$**

F 7.14

G 1.4

H 0.714

J 0.14

5 **Price for Different Types of Reeds**

Item	Number of Reeds per Box	Price per Box
Clarinet reeds	10	$5.13
Oboe reeds	1	$4.95
Alto saxophone reeds	5	$8.42

Based on this table, what is the cost to buy 10 of each different type of reed?

A $18.50

B $26.92

C $71.47

D $98.35

GO ON

6 Look at the table.

Cost of Signs at Two Stores

Store	Neon Sign	Wood Sign
A	$589	$227
B	$534	$285

What would be the *least* amount of money Jeremy's dad could spend if he bought one of each type of sign?

F $512
G $761
H $816
J $819

7 Maria has a piece of ribbon $\frac{5}{6}$ foot long. She cuts $\frac{3}{4}$ foot off of the piece of ribbon. What is the length of the remaining piece of ribbon?

A $\frac{1}{12}$ foot

B $\frac{1}{8}$ foot

C $\frac{1}{6}$ foot

D $\frac{1}{4}$ foot

GO ON

8 **Harry worked $1\frac{3}{4}$ hours on Friday and $3\frac{1}{2}$ hours on Saturday. What was the total amount of time Harry worked on those two days?**

F $4\frac{1}{4}$ hours

G $4\frac{5}{8}$ hours

H $5\frac{1}{4}$ hours

J $5\frac{1}{2}$ hours

9 **$6.596 \div 0.04 =$**

A 164.9
B 16.49
C 6.06
D 0.61

10 **Cody was paid $15.00 for washing his mother's car. If he spends $5.75 on a movie, $1.50 on candy, and $2.00 for a soda, which is closest to the amount he will have left?**

F $10.00
G $8.00
H $5.00
J $0

Do not turn the page until your teacher tells you to do so.

STOP

11 There are 30 red marbles and 150 blue marbles in a box. What is the ratio of blue marbles to red marbles?

A $\frac{180}{30}$

B $\frac{30}{80}$

C $\frac{150}{30}$

D $\frac{30}{150}$

12 What is the least common multiple of 6 and 10?

F 20

G 30

H 60

J 90

13 Which statement is true?

A $^{-}599 > {}^{-}385$

B $4{,}119 < {}^{-}3{,}513$

C $^{-}56{,}803 > {}^{-}64{,}122$

D $^{-}85 > 89$

14 Which group contains *only* prime numbers?

F 5, 13, 29, and 47

G 7, 11, 27, and 43

H 7, 19, 33, and 41

J 11, 17, 37, and 39

GO ON

15 What is the greatest common factor of 30, 42, and 48?

A 2
B 3
C 6
D 8

16 The picture shows the number of stars Angie received from her piano teacher for practicing.

What is the ratio of the number of striped stars to black stars?

F 4 to 3
G 3 to 4
H 4 to 10
J 6 to 10

17 Which statement is true?

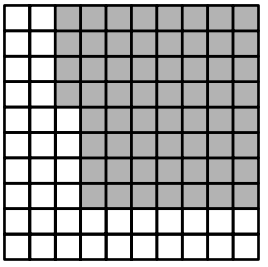
A $\frac{3}{4} > \frac{7}{12}$

B $\frac{2}{3} > \frac{6}{7}$

C $\frac{3}{8} > \frac{6}{11}$

D $\frac{1}{5} > \frac{1}{4}$

18 Which represents the part of the 10-by-10 grid that is shaded?



F $\frac{1}{2}$

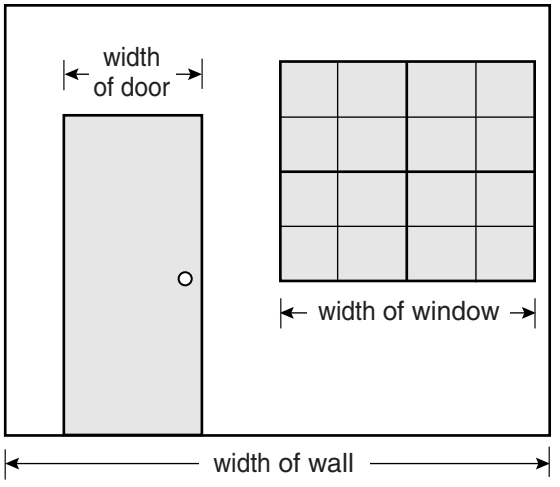
G $\frac{3}{5}$

H $\frac{7}{10}$

J $\frac{3}{4}$

GO ON

19 A wall in Kelly's house is diagrammed below.



Which is closest to the width of the wall?

A 6 window widths
B 4 window widths
C 2 door widths
D 4 door widths

20 What is the sum of the measures of all the interior angles of any quadrilateral?

F 90°
G 180°
H 360°
J 450°

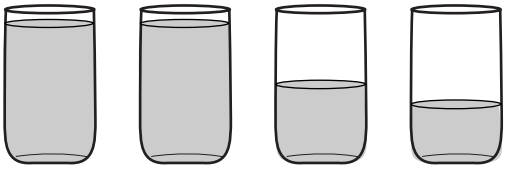
21 Which two figures *always* have four congruent sides?

A Rhombus and square
B Rectangle and rhombus
C Square and equilateral triangle
D Parallelogram and rectangle

22 If the diameter of a circle is 7 inches, which is closest to the circumference?

F 21.98 in.
G 38.47 in.
H 43.96 in.
J 153.86 in.

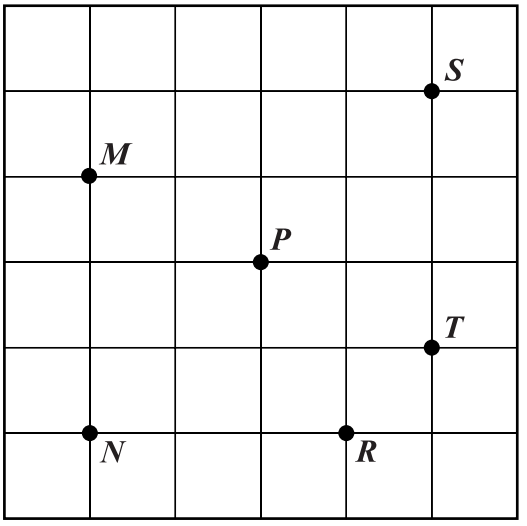
23 The glasses shown each hold 12 fluid ounces when full. The shaded portions show how much water Robert drinks on average every morning.



Which is closest to the amount of water Robert drinks on average every morning?

A 3 fluid ounces
B 18 fluid ounces
C 22 fluid ounces
D 34 fluid ounces

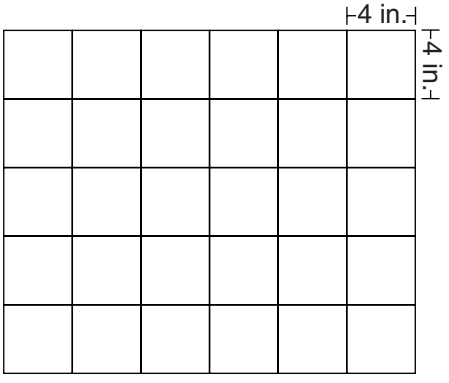
24 Six points are shown on the grid.



Which three points can be connected in the order shown to form an acute angle?

F Points M, N, and R
G Points M, N, and P
H Points N, R, and S
J Points N, P, and S

25 What is the area of the large rectangle shown if each small square is 4 inches wide and 4 inches long?

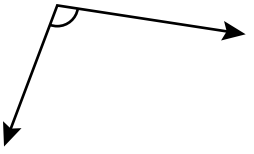


A 480 sq in.
B 120 sq in.
C 80 sq in.
D 30 sq in.

26 Which solid could *not* have two parallel faces?

F Cube
G Rectangular prism
H Pyramid
J Cylinder

27



The measure of the angle shown is —

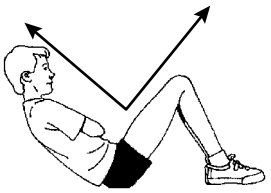
A between 0° and 45°
B between 45° and 90°
C between 90° and 180°
D greater than 180°

28 Which measurement represents the *greatest* volume?

F 17 pints
G 2 gallons
H 35 cups
J 9 quarts

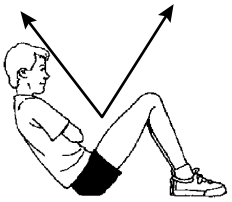
GO ON

29

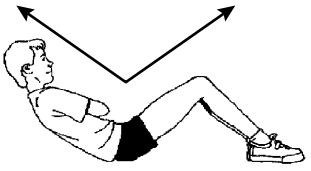


Which picture appears to show Steve's body at an angle congruent to the angle shown above?

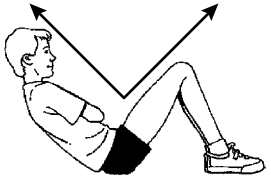
A



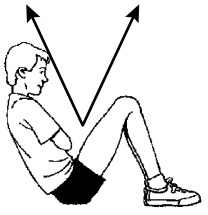
B



C



D



30 Which shape is *not* a quadrilateral?

F Square
G Parallelogram
H Pentagon
J Trapezoid

GO ON

31 Chrissy has 4 white towels, 2 yellow towels, and 3 blue towels in a bag. What is the probability that the first towel chosen at random from the bag will be white?

A $\frac{1}{4}$

B $\frac{1}{9}$

C $\frac{4}{5}$

D $\frac{4}{9}$

32 What is the range of the numbers listed?

76, 59, 91, 22, 43, 57, 89, 76, 31

F 43

G 45

H 60

J 69

GO ON

33 Which stem-and-leaf plot correctly displays this data?

15 32 21 13 36 10 23

30 15 11 27 42 33

A

Stem	Leaf
1	0, 1, 3, 5, 5
2	1, 3, 7
3	0, 2, 3, 6
4	2

B

Stem	Leaf
1	1, 3, 5, 5
2	1, 3, 7
3	2, 3, 6
4	2

C

Stem	Leaf
1	0, 1, 3, 5
2	1, 3, 7
3	0, 2, 3, 6
4	2

D

Stem	Leaf
1	1, 3, 5
2	1, 3, 7
3	2, 3, 6
4	2

34 76, 79, 75, 77, 74

For the data listed, the value 76.2 represents the —

F median
G mode
H range
J mean

35 These are six songs that are on Jane's new CD.

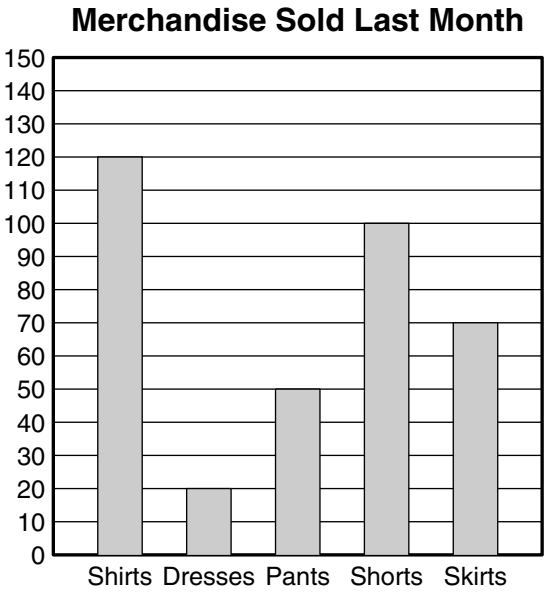
Pillar
Slim Slug
Burdock
Sweetbread
Tutu
Windmill Climber

If her CD player plays the songs randomly, what is the probability that the song *Mongoose Omelette* will play first?

A $^{-}0.6$
B 0
C 0.6
D 1

GO ON

36 Look at the graph.



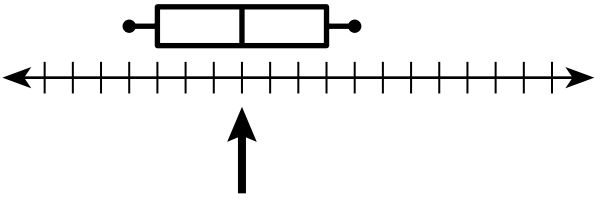
Which type of clothing appears to have had 5 times the sales of dresses?

F Shorts
G Pants
H Shirts
J Skirts

37 The number of pages Jane read in a book each day for one week are listed below.

{12, 18, 19, 11, 12, 15, 18}

Below is the box-and-whisker plot of this data. To which number is the arrow most likely pointing?



A 11
B 12
C 15
D 18

38 Mr. Warren requires his students to read 2 books: 1 book from list #1 and 1 book from list #2.

List #1	List #2
A Trip to Asia	*Mystery at Chelsea*
Darlene's Hope	*Notes From Kent*
Sunset Hope	*A Clan of Many*

What is the total number of different combinations for the 2 books?

F 9
G 6
H 2
J 1

GO ON

39 Based on the geometric pattern shown, what is the value of 8^5?

$$8^1 = 8$$
$$8^2 = 64$$
$$8^3 = 512$$
$$8^4 = 4{,}096$$

A 13
B 40
C 20,480
D 32,768

40 Which represents the variable in the following number sentence?

$$3 + v = 45$$

F 3
G v
H $=$
J 45

41 $2.3 \times 10^7 =$

A 230,000,000
B 23,000,000
C 2,300,000
D 230,000

42 Which method could be used to solve the number sentence shown?

$$4x = 16$$

F Subtract 4 from $4x$, and subtract 4 from 16
G Subtract 4 from $4x$, and subtract 16 from 16
H Divide $4x$ by 4, and divide 16 by 16
J Divide $4x$ by 4, and divide 16 by 4

GO ON

43 What value of y makes the number sentence shown true?

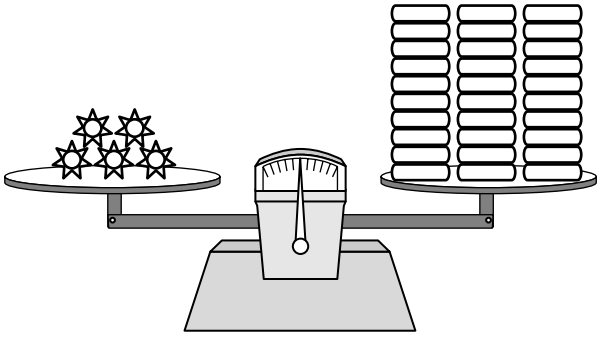
$$y - 3 = 15$$

A 5
B 12
C 18
D 45

44

represents w
represents 1

Use the representations above to answer the question.



If the scale is balanced, which number sentence does it best represent?

F $5w = 30$
G $w + 5 = 30$
H $5 - w = 30$
J $w \div 5 = 30$

45 The number 514 in scientific notation is written as —

A 5.14×10^1
B 5.14×10^2
C 51.4×10^1
D 514×10^2

46 Which is an equation?

F $x + 6$

G $5 > 7$

H x

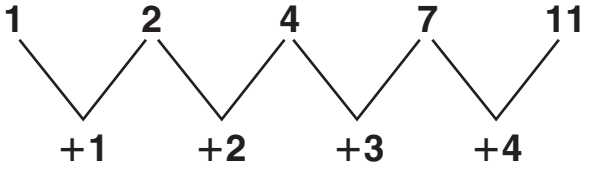
J $x + \frac{1}{2} = 9$

GO ON

47 **Kale wrote the number pattern shown.**

1, 2, 4, 7, 11, . . .

He noticed another pattern when he found that the differences between the numbers increased by 1 as shown below.



If the differences continue to increase by 1, what will be the 7th term in Kale's *original* pattern?

A 15
B 19
C 21
D 22

48

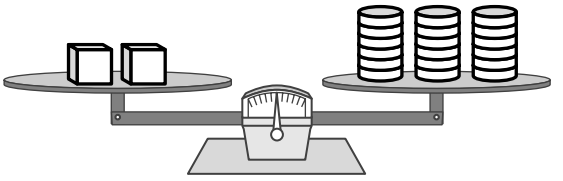
 **represents *r***

 **represents 1**

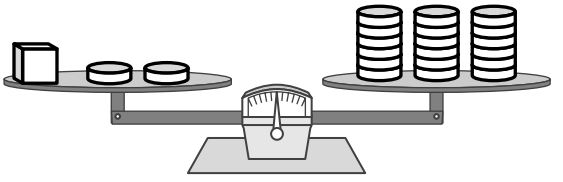
Using the representations above, which model best represents the following?

$$r + 2 = 18$$

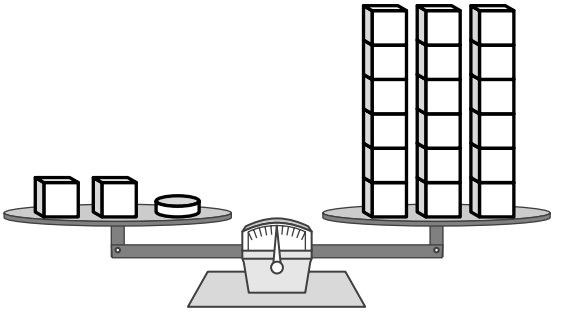
F



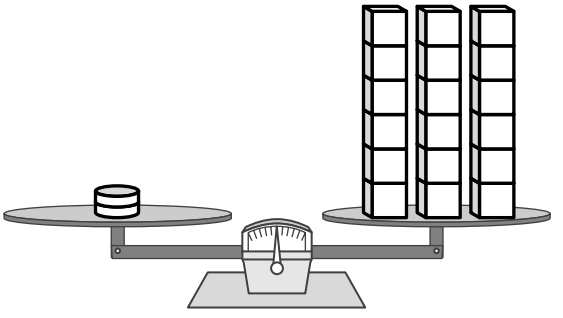
G



H

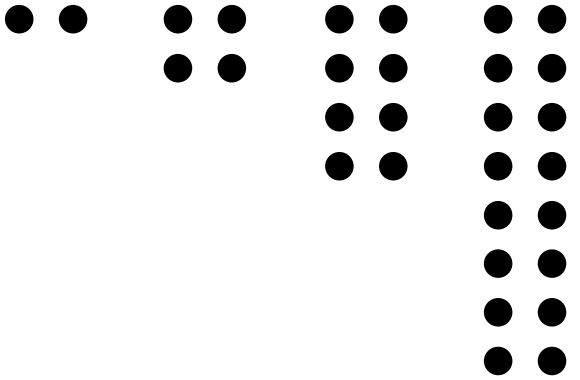


J



GO ON

49 The first four figures in a pattern are shown.



If the pattern continues to double the number of dots, what will be the total number of dots in the 6th figure in the pattern?

A 128
B 64
C 32
D 14

50 Gracie's pattern of increasing perfect squares is shown below.

25, 36, __, 64, 81, 100

What number does Gracie need to square to find the missing term?

F 5
G 6
H 7
J 8

STOP