

VIRGINIA STANDARDS OF LEARNING

Spring 2007 Released Test

GRADE 6 MATHEMATICS

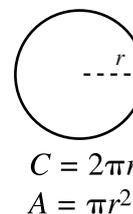
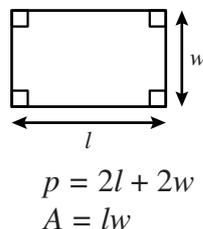
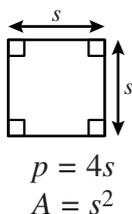
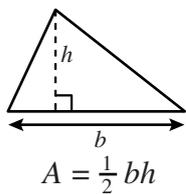
Form M0117, CORE 1

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Grade 6 Mathematics Formula Sheet

Geometric Formulas



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

Which is less than 1.064?

A 1.159

B 1.059

C 1.171

D 1.071

1 Silas bought a bag of 12 muffins. There were 7 blueberry muffins and 3 banana muffins in the bag. The rest of the muffins were cranberry. What fractional part of the bag of muffins was cranberry?

A $\frac{1}{6}$

B $\frac{5}{12}$

C $\frac{1}{2}$

D $\frac{7}{12}$

2 $0.01 \overline{)2.86}$

F 2.86

G 286

H 2,860

J 28,600

3 Look at the table.

Cost of T-shirts

Vendor	Cost per T-shirt
Al's T-shirt Shop	\$6.99
T-shirt Connection	\$7.49

How much more would a person pay for 4 T-shirts at T-shirt Connection than at Al's T-shirt Shop?

- A** \$0.50
- B** \$2.00
- C** \$20.47
- D** \$22.97

4 $4.48 \div 70 =$

- F** 15.63
- G** 6.4
- H** 0.156
- J** 0.064

- 5 A bicycle shop has 8 bicycles that sell for \$298.75 each. Which is *closest* to the total cost of all the bicycles?
- A \$300
 - B \$800
 - C \$2,000
 - D \$2,400

- 6 Look at the table.

**James's
Weekend Activities**

Activity	Time (hours)
Cleaning bedroom	$1\frac{2}{3}$
Washing dishes	$\frac{1}{4}$
Doing homework	$2\frac{3}{4}$
Cleaning bathroom	$\frac{1}{3}$
Folding clothes	$\frac{1}{2}$

Which estimate is *closest* to the total amount of time James spends on weekend activities?

- F 10 hours
- G 6 hours
- H 3 hours
- J 1 hour

7 A farmer has 6 cartons of specialty eggs for sale. Each carton contains 12 eggs. If $\frac{2}{3}$ of the eggs are brown eggs, what is the total number of brown eggs he has for sale?

- A** 4
- B** 8
- C** 48
- D** 72

8 A carpet cleaning company charged \$99.99 to clean 3 rooms in a house and \$29.99 for each extra room. What is the total amount of money the company would charge to clean 5 rooms in the house?

- F** \$189.96
- G** \$159.97
- H** \$149.95
- J** \$129.98

Distance Frank Walked

Day	Distance (in miles)
Mon.	$\frac{3}{4}$
Tue.	$1\frac{1}{2}$
Wed.	$\frac{2}{3}$

According to the table, what is the total distance Frank walked for the three days?

- A $1\frac{2}{3}$ miles
- B $2\frac{1}{6}$ miles
- C $2\frac{1}{4}$ miles
- D $2\frac{11}{12}$ miles

10 Seth bought a bag of pencils.

- $\frac{1}{2}$ of the pencils are red
- $\frac{1}{6}$ of the pencils are blue

What fractional part of the bag of pencils is either red or blue?

F $\frac{1}{6}$

G $\frac{1}{2}$

H $\frac{2}{3}$

J $\frac{5}{6}$

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



11 Which is equivalent to $\frac{7}{10}$?

- A 0.7%
- B 7%
- C 70%
- D 700%

12 Which statement is *not* true?

- F $-8 > -10$
- G $-6 < 6$
- H $3 > -2$
- J $4 < -9$

13 Which point on the number line represents the least integer?

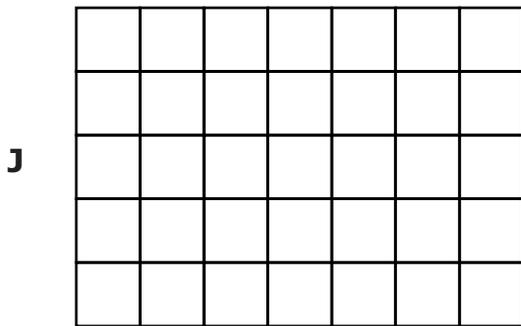
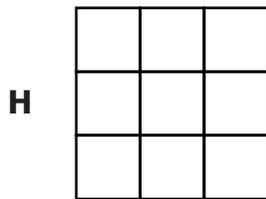
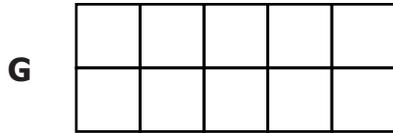


- A Q
- B R
- C S
- D T

14

 represents 1 unit

Using the representation above, which figure has a prime number of total units?



15 Which list of numbers contains *only* common factors of 24 and 36?

- A** 2, 4, 6, 12
- B** 2, 4, 8, 12
- C** 3, 6, 9, 12
- D** 3, 6, 12, 18

16 Which fraction has the same value as 0.6?

- F** $\frac{1}{6}$
- G** $\frac{1}{2}$
- H** $\frac{3}{5}$
- J** $\frac{2}{3}$

17

Camelia's Grades

Grade	Number Earned
A	4
B	3
C	1

According to the table, what is the ratio of the number of A's Camelia earned to the number of B's she earned?

- A 4:7
- B 3:4
- C 7:4
- D 4:3

18 Which is true?

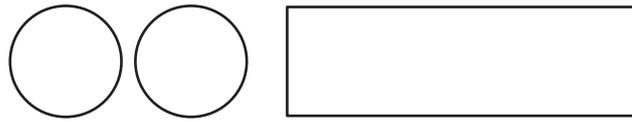
F $\frac{7}{11} \geq \frac{5}{6}$

G $\frac{2}{5} < \frac{3}{8}$

H $\frac{3}{10} < \frac{4}{9}$

J $\frac{5}{12} \geq \frac{4}{7}$

- 19 Pictured are the three shapes Nora cut out of poster board to build a three-dimensional model.



If there is no overlapping, what is the name of the model that could be made from the three shapes?

- A Cone
 - B Rectangular prism
 - C Sphere
 - D Cylinder
-
- 20 What is the total number of quarts in $3\frac{1}{2}$ gallons?
- F 7
 - G 12
 - H 14
 - J 28

21 Rory and Curtis are on the stage crew for the school play. The rectangular stage measures 20 feet by 40 feet. What is the minimum amount of tape they will need to outline the stage?

- A 60 feet
- B 120 feet
- C 400 feet
- D 800 feet

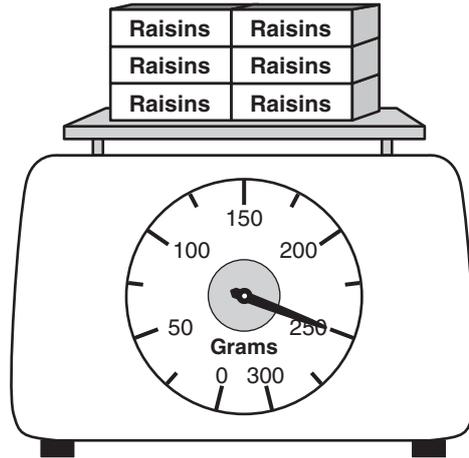
22 Which measurement represents the greatest length?

- F 6 feet
- G 27 inches
- H 1 meter
- J 98 centimeters

23 The diameter of a circle is 6 feet. Which is *closest* to the circumference of the circle?

- A 18.84 ft
- B 28.26 ft
- C 37.68 ft
- D 113.04 ft

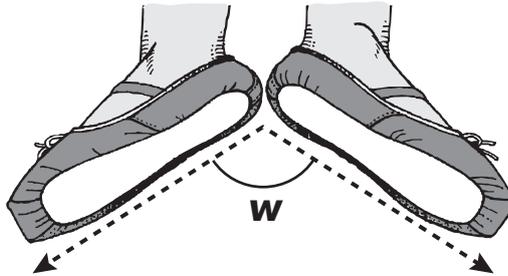
24 The scale shows the weight in grams of 6 raisin boxes of the same size.



Which is closest to the weight of 1 raisin box?

- F 250 grams
- G 125 grams
- H 84 grams
- J 42 grams

25 The picture shows a ballet dancer's feet in first position.



Which is most likely the measure for angle w , the angle formed by the dancer's feet?

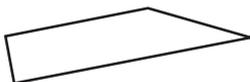
- A 65°
- B 75°
- C 115°
- D 125°

26 Which measurement represents a length shorter than 5 centimeters?

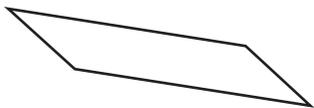
- F 1 foot
- G 2 kilometers
- H 3 inches
- J 4 millimeters

27 Which figure appears to have *exactly* one pair of parallel sides and two 90° angles?

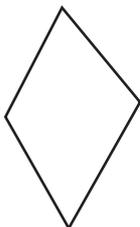
A



B



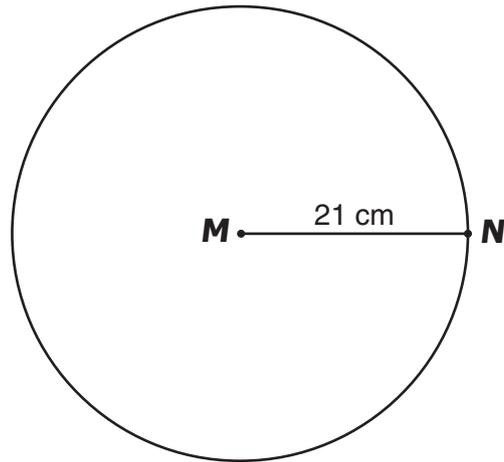
C



D



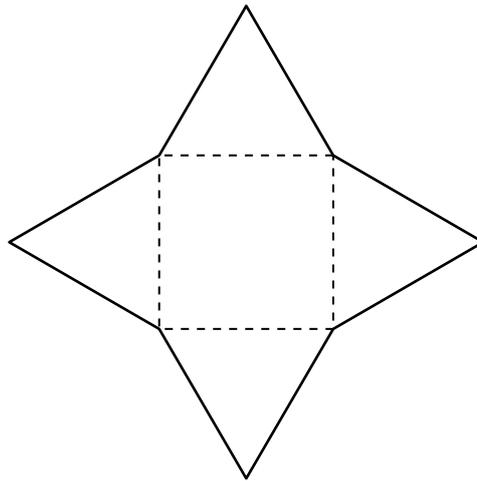
28 Point M is the center of the circle shown. Point N lies on circle M .



Which is *closest* to the area of the circle?

- F 66 cm^2
- G 132 cm^2
- H $1,386 \text{ cm}^2$
- J $5,544 \text{ cm}^2$

- 29 Sarah folded the following figure along the dotted lines to make a three-dimensional shape.



Which *best* describes the shape Sarah made?

- A Triangular pyramid
 - B Triangular prism
 - C Rectangular prism
 - D Square pyramid
- 30 Which are the measures of the 3 angles of an equilateral triangle?
- F $35^\circ, 45^\circ, 110^\circ$
 - G $45^\circ, 45^\circ, 90^\circ$
 - H $60^\circ, 60^\circ, 60^\circ$
 - J $30^\circ, 60^\circ, 90^\circ$

31 Look at the table.

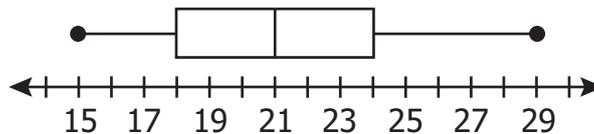
**Number of Customers
at a Restaurant**

Day	Number
Monday	134
Tuesday	126
Wednesday	115
Thursday	108
Friday	172

According to the table, what was the median number of customers?

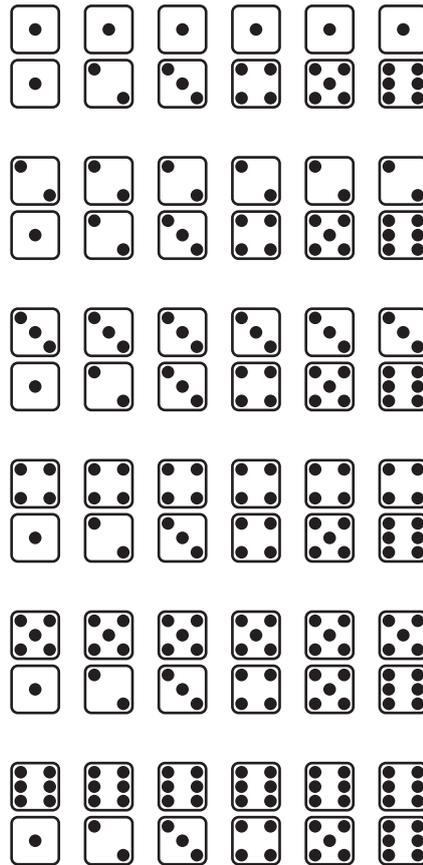
- A 115
- B 126
- C 131
- D 172

32 Which is most likely the range for the data plotted in the box-and-whisker plot?



- F 6
- G 14
- H 21
- J 29

33 The possible outcomes when rolling a pair of fair number cubes are listed below.



What is the probability of rolling the same number of dots on both number cubes on the first try?

- A $\frac{30}{36}$
- B $\frac{5}{36}$
- C $\frac{6}{36}$
- D $\frac{1}{36}$

- 34 The graph shows how the number of video games in Ginny's collection increased over a period of months.



Which statement is *false* about Ginny's video game collection during this period?

- F The number of video games did not appear to change from March to April.
 - G The trend for the number of video games is increasing.
 - H The greatest monthly increase in the number of video games was from January to February.
 - J The number of video games increased by 1 from May to June.
- 35 The data below lists the number of pages in each book Harry read last summer.

225, 157, 144, 312,

281, 276, 166

What is the median of the data?

- A 168
- B 223
- C 225
- D 312

36 Look at the table.

**Continuing Education
Class Enrollment**

Class	Number of Students
Theater Arts	8
Creative Writing	6
Cooking	11
Pottery	12
Computer Animation	13

According to the table, what is the mean number of students enrolled in a class?

- F** 7
- G** 10
- H** 11
- J** 50

37 Look at the chart.

Heights of Volleyball Players (inches)	
56, 67, 69, 58, 62, 68, 72, 74, 62, 64, 78	

Which stem-and-leaf plot correctly displays the information from the chart?

A

Heights of Volleyball Players
(inches)

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

Key
8 9 means 89.

B

Heights of Volleyball Players
(inches)

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

Key
8 9 means 89.

C

Heights of Volleyball Players
(inches)

Stem	Leaf
5	6 8
6	2 2 4 7 8
7	2 4 8

Key
8 9 means 89.

D

Heights of Volleyball Players
(inches)

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

Key
8 9 means 89.

38 Look at the table.

Pastries in a Box

Filling	Number
Raspberry	4
Blueberry	3
Cream cheese	6
Apple	7

If Mark randomly chooses 1 of these same-sized pastries from the box, what is the probability that it will have a cream cheese filling?

- F** 25%
- G** 30%
- H** 43%
- J** 60%

39 Based on the pattern shown, what is the value of 6^6 ?

$$6^1 = 6$$

$$6^2 = 36$$

$$6^3 = 216$$

$$6^4 = 1,296$$

- A** 1,308
- B** 2,592
- C** 36,000
- D** 46,656

40 Which is an equation?

F $52 = 0.5 + x$

G $5x + 7$

H $(48 - 6x) + 13$

J $\frac{1}{2}x + 7$

41 Which is a perfect square between 81 and 121?

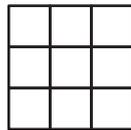
- A** 86
- B** 99
- C** 100
- D** 114

42 Patty made a figure by drawing 4 small squares as shown below.

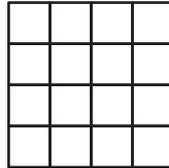


1st

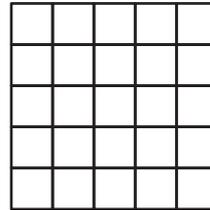
Patty then increased the size of the figure by adding 1 row and 1 column of small squares to get the next figure in the pattern. The next three figures in the pattern are shown below.



2nd



3rd



4th

If Patty continues the pattern using the same rule, how many small squares will make up the 7th figure?

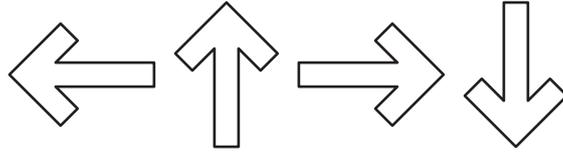
- F 64
- G 49
- H 34
- J 25

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

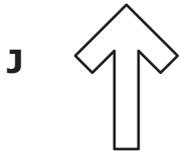
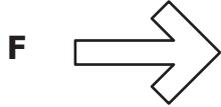
$$z + 53 = 92$$

- A 4,876
- B 145
- C 49
- D 39

44 A pattern is made by repeating the four shapes shown below.



If the pattern continues in the same way, what will be the 14th shape?

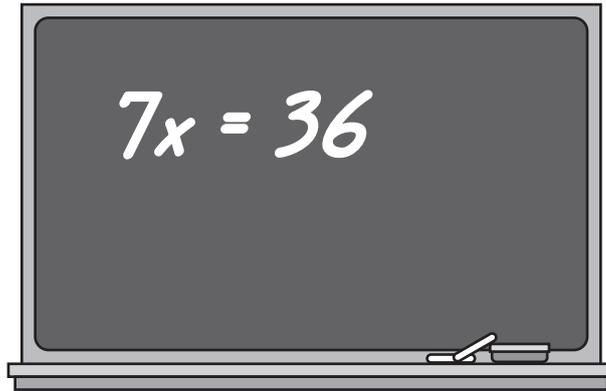


45 Which best describes the circled part of the following?

$$2(x) + 5 = 9$$

- A Variable
- B Coefficient
- C Term
- D Equation

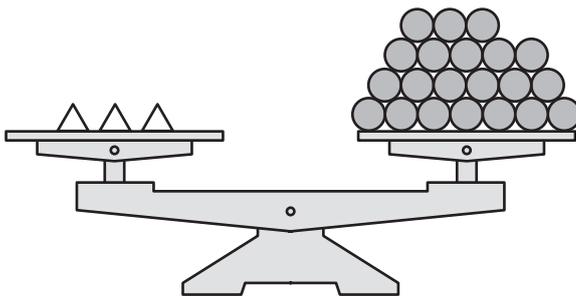
46 Miss Jackson wrote this number sentence on the board.



Which procedure could be used to find a value for x that will make the number sentence true?

- F** Subtract 7 from $7x$, and subtract 7 from 36.
- G** Multiply $7x$ by 7, and multiply 36 by 7.
- H** Divide $7x$ by 7, and divide 36 by 7.
- J** Add 7 to $7x$, and add 7 to 36.

- 47 The drawing below is a scale that is balanced. Each \triangle represents an x , and each \circ represents a 1.



Which best represents the drawing?

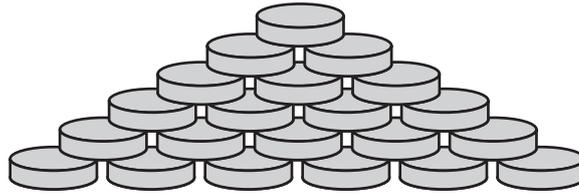
- A $3 + x = 21$
B $3 + x > 21$
C $3x > 21$
D $3x = 21$
- 48 The first term in the following pattern is 1.

1, 7, 19, 43, 91

If the pattern continues in the same way, which rule could be used to get the next term in the pattern?

- F Multiply by 2, and then add 5.
G Add 12.
H Multiply by 3, and then add 4.
J Add 6.

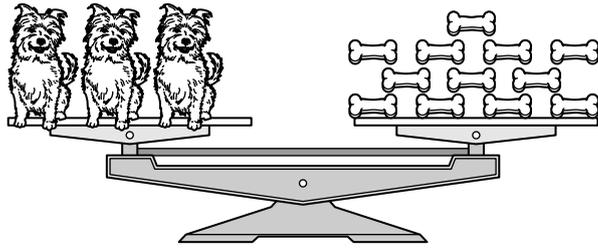
- 49 Luanne stacked some checkers in a triangular shape as pictured. Each row has 1 less checker than the previous row.



Luanne made another stack using the same pattern starting with 8 checkers in the bottom row. How many total checkers were in her new stack?

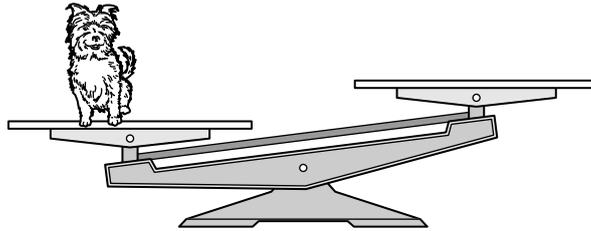
- A 19 checkers
- B 21 checkers
- C 29 checkers
- D 36 checkers

50 The scale below is balanced.



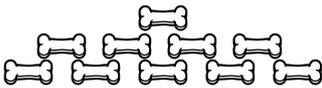
	represents x
	represents 1

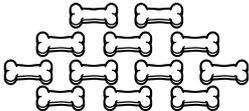
Using the representations and scale above, which could be placed on the right side of the following scale to make it balanced?



F 

G 

H 

J 



Answer Key-6073-M0117

Test Sequence Number	Correct Answer	Reporting Category	Reporting Category Description
1	A	002	Computation and Estimation
2	G	002	Computation and Estimation
3	B	002	Computation and Estimation
4	J	002	Computation and Estimation
5	D	002	Computation and Estimation
6	G	002	Computation and Estimation
7	C	002	Computation and Estimation
8	G	002	Computation and Estimation
9	D	002	Computation and Estimation
10	H	002	Computation and Estimation
11	C	001	Number and Number Sense
12	J	001	Number and Number Sense
13	C	001	Number and Number Sense
14	F	001	Number and Number Sense
15	A	001	Number and Number Sense
16	H	001	Number and Number Sense
17	D	001	Number and Number Sense
18	H	001	Number and Number Sense
19	D	003	Measurement and Geometry
20	H	003	Measurement and Geometry
21	B	003	Measurement and Geometry
22	F	003	Measurement and Geometry
23	A	003	Measurement and Geometry
24	J	003	Measurement and Geometry
25	C	003	Measurement and Geometry
26	J	003	Measurement and Geometry
27	A	003	Measurement and Geometry
28	H	003	Measurement and Geometry
29	D	003	Measurement and Geometry
30	H	003	Measurement and Geometry
31	B	004	Probability and Statistics
32	G	004	Probability and Statistics
33	C	004	Probability and Statistics
34	J	004	Probability and Statistics
35	C	004	Probability and Statistics
36	G	004	Probability and Statistics
37	A	004	Probability and Statistics
38	G	004	Probability and Statistics
39	D	005	Patterns, Functions, and Algebra
40	F	005	Patterns, Functions, and Algebra
41	C	005	Patterns, Functions, and Algebra
42	F	005	Patterns, Functions, and Algebra
43	D	005	Patterns, Functions, and Algebra
44	J	005	Patterns, Functions, and Algebra
45	A	005	Patterns, Functions, and Algebra
46	H	005	Patterns, Functions, and Algebra
47	D	005	Patterns, Functions, and Algebra
48	F	005	Patterns, Functions, and Algebra
49	D	005	Patterns, Functions, and Algebra
50	G	005	Patterns, Functions, and Algebra

Grade 6 Math, Core 1

If you get this many items correct:	Then your converted scale score is:
0	000
1	012
2	067
3	101
4	125
5	145
6	161
7	176
8	188
9	200
10	211
11	221
12	231
13	240
14	248
15	256
16	264
17	272
18	279
19	287
20	294
21	301
22	308
23	315
24	322
25	329
26	336
27	342
28	349
29	356
30	363
31	370
32	378
33	385
34	393
35	401
36	409
37	417
38	426
39	435
40	445
41	456
42	467
43	480
44	494
45	510
46	529
47	553
48	586
49	600
50	600

