Attucks Middle School

2010

Mathematics Summer Packet for Incoming 7th Graders

FCAT Mathematics Reference Sheet

Area

	Triangle	$A = \frac{1}{2}bh$
	Rectangle	$A = \ell w$
	Trapezoid	$A = \frac{1}{2}h(b_1 + b_2)$
	Parallelogram	$A = bh$
	Circle	$A = \pi r^2$

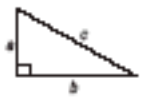
KEY	
b = base	d = diameter
h = height	r = radius
ℓ = length	A = area
w = width	C = circumference
$S.A.$ = surface area	V = volume
Use 3.14 or $\frac{22}{7}$ for π.	

Circumference

$C = \pi d = 2\pi r$

In a polygon, the sum of the measures of the interior angles is equal to $180(n - 2)$, where n represents the number of sides.

Pythagoean Theorem: $c^2 = a^2 + b^2$



Volume	Total Surface Area		
	Right Circular Cylinder	$V = \pi r^2 h$	$S.A. = 2\pi rh + 2\pi r^2$
	Rectangular Solid	$V = \ell wh$	$S.A. = 2(\ell w) + 2(hw) + 2(lh)$

Conversions

1 yard = 3 feet = 36 inches
1 mile = 1,760 yards = 5,280 feet
1 acre = 43,560 square feet
1 hour = 60 minutes
1 minute = 60 seconds

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

1 liter = 1000 milliliters
1 meter = 100 centimeters = 1000 millimeters
1 kilometer = 1000 meters
1 gram = 1000 milligrams
1 kilogram = 1000 grams

1 pound = 16 ounces
1 ton = 2,000 pounds

Metric numbers with four digits are presented without a comma (e.g., 9960 kilometers). For metric numbers greater than four digits, a space is used instead of a comma (e.g., 12 500 liters).

Name _____ Date _____

Test Practice

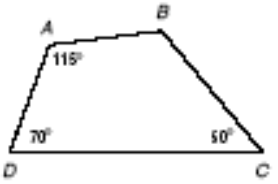
Diagnostic Test

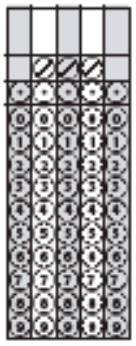
Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

1 The Lower Suwannee National Wildlife Refuge comprises 52,000 acres of wetland habitat, including marshes and swamps. What is 52,000 written in scientific notation? **MA.A.1.3.4** **1** _____

A 52.0×10^3 **B** 5.2×10^3
C 5.2×10^4 **D** 0.52×10^4

2 What is the measure of $\angle B$? **MA.C.1.3.1** **2**





3 Admission to an adventure park costs $20. All rides are free, and games cost $2.50. Which expression can be used to determine the cost of one admission and g games? **MA.D.2.3.2** **3** _____

F $20 + 2.5g$ **G** $g(20 + 2.5)$
H $20g + 2.5$ **I** $2.5g - 20$

4 The manager of an electronics store thinks that he can increase sales if he advertises his products to a wider range of consumers. To determine the best way to advertise his products, he surveyed every fifth customer who came into the store for a week, from opening until closing. After 246 responses, he decided he should advertise more specialty products. A sales person thinks the survey is probably biased. What error did the manager make? **MA.E.3.3.1** **4** _____

A The survey was not random.
B The sample represents only current customers, not all consumers.
C The sample is too small.
D The survey should have been done for at least a month.

Go on

Name _____ Date _____

Test Practice

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.

5 If the volume of a rectangular prism is 480 cubic centimeters, what is the volume, in cubic centimeters, of a rectangular prism with dimensions twice as long? **MA.B.1.3.3**

5 

6 The table shows the melting points of four chemical elements. Which list shows these elements in order from lowest to highest melting point? **MA.A.1.3.2**

Element	Temperature °C
Argon	−189
Krypton	−156
Neon	−248
Radon	−71

F Radon, Krypton, Argon, Neon
G Neon, Argon, Krypton, Radon
H Neon, Kryton, Argon, Radon
I Radon, Argon, Krypton, Neon

6 _____

7 If $m\angle A = 24$, what is the measure of its complement? **MA.C.1.3.1**

A 66 **B** 90
C 114 **D** 180

7 _____

8 Given the function table at the right, what would be the value of y when x is 9? **MA.D.1.3.2**

x	y
−1	−8
1	2
3	12
5	22
7	32
9	?

F 37 **G** 42
H 52 **I** 62

8 _____

Go on

Name _____ Date _____

Test Practice

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.

9 A health foods co-op sponsors an organic vegetable garden for its members. To keep rabbits and other animals out of the garden, the co-op decided to place a mesh fence around the perimeter of the garden. If the rectangular garden measures 9.5 meters by 6.3 meters, how much fencing, in meters, do they need? **MA.B.1.3.1**

9 

10 Helena pulled a bandage out of a box without looking. If there are 5 large, 4 medium, and 3 small bandages in the box, what is the probability she pulled out a medium bandage? **MA.E.2.3.2** **10** _____

A $\frac{1}{4}$ **B** $\frac{1}{3}$

C $\frac{1}{2}$ **D** $\frac{2}{3}$

11 If Maurice can walk 5.25 miles in 1.5 hours, how far can he walk in 30 minutes? **MA.B.1.3.2** **11** _____

F 3.75 miles **G** 3.5 miles

H 3 miles **I** 1.75 miles

12 The chart shows the number of kilometers that members of a bicycling club have traveled on each of their last 10 outings. What is the mean number of kilometers the bicyclists rode? **MA.E.1.3.2** **12** _____

35	32	28	36	18
37	32	29	41	26

A 31.4 **B** 31.8

C 32 **D** 32.5

Name Date

Test Practice

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.

13 The function table gives values for x and y. Which of the following shows how to determine y for any given value of x? **MA.D.1.3.1**

x	y
−4	6
−3	3
−2	0
−1	−3
0	−6
1	−9

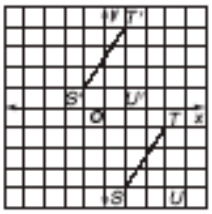
F $y = -3x - 6$
G $y = -x - 3$
H $y = x + 3$
I $y = 3x + 6$

13 _____

14 Lisa bought a backpack on sale for 25% off the regular price. If the regular price of the backpack was $25, how much did Lisa pay for it after the mark down? **MA.A.3.3.3**

14 _____

15 Which of the following describes the transformation that moves $\triangle STU$ to $\triangle S'T'U'$? **MA.C.2.3.1**



A 90° counterclockwise rotation
B reflection over the x-axis and then over the y-axis
C translation 5 units up and 2 units left
D translation 2 units up and 4 units left

15 _____

16 The Hobe Sound National Wildlife Refuge consists of two tracts of land with a combined total of 967 acres of protected habitat. The 232-acre mainland tract lies along the Atlantic Coast. The Jupiter Island beach tract is the home for one of the most productive sea turtle nesting sites in the United States. How many square feet of land is set aside for the sea turtles? **MA.B.2.3.2**

F 10,105,920 square feet
G 32,016,600 square feet
H 42,122,520 square feet
I 52,228,440 square feet

16 _____

Go on

Name _____ Date _____

Test Practice

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.

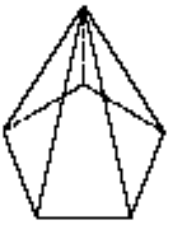
17 The results of a random survey of 500 books produced at a publishing house showed that 11 had torn pages and 14 had uncut pages. A second random survey of 200 books at the same publishing house several days later showed that 4 books had torn pages and 9 had uncut pages. If the second survey had been like the first in terms of the portion of flawed books, how many **fewer** defects altogether would have been discovered? **MA.E.2.3.1** **17** _____

A 3 **B** 9
C 10 **D** 12

18 Which number can you multiply by 10 to obtain a whole number? **MA.A.3.3.1** **18** _____

F $\frac{24}{1,000}$ **G** 0.24
H 2.4 **I** 4.02

19 The figure shows a pentagonal pyramid. How many vertices does it have? **MA.C.1.3.1**



19

20 Which expression represents the nth term in the pattern 5, 2, −1, −4, −7, …? **MA.D.1.3.1** **20** _____

A $n - 3$ **B** $8 - 3n$
C $4n + 1$ **D** $4 + n^2$

Go on

Name _____ Date _____

Test Practice

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 What is the value of $5 + (36 - 15) \div 3$? **MA.A.3.3.2** **21** _____

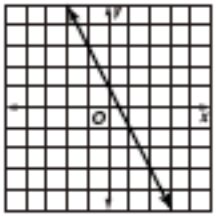
22 Tamika needs to glue together two pieces of balsa wood so that they are perpendicular. If Tamika measures the angle formed by the two pieces of wood, what should the angle measure be? **MA.C.3.3.1** **22** _____

F 45 **G** 90 **H** 120 **I** 180

23 The list shows the number of pages Nabuko read each day in the novel her English teacher assigned. On how many days did she read **more** than the **median** number of pages? **MA.E.1.3.2** **23** _____

12, 18, 11, 6, 15, 19, 9, 6, 7, 8

24 Which equation describes the function whose graph is shown? **MA.D.1.3.2** **24** _____



A $y = -2x + 1$
B $y = -x + 1$
C $y = x + 1$
D $y = 2x + 1$

Go on

Name _____ Date _____

Test Practice

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.

25 The scale on a road atlas is $\frac{3}{4}$ inch = 50 miles. If the distance between Jacksonville, Florida, and New Orleans, Louisiana, is about 545 miles, what is the approximate distance on the map in inches? Record your answer as a decimal. **MA.B.1.3.4** 25 _____

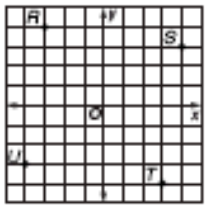
F 14.533 **G** 9.250
H 8.175 **I** 7.266

26 The minimum distance between Earth and Mars is 34 million miles. Which of the following shows 34 million in scientific notation? **MA.A.1.3.2** 26 _____

A 0.34×10^8 **B** 3.4×10^7 **C** 3.4×10^6 **D** 34×10^6

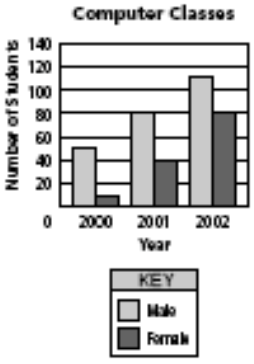
27 Which point **best** represents the location of $(3, -4)$? **MA.C.3.3.2** 27 _____

F point R
G point S
H point T
I point U



28 A middle school analyzed class records to determine the total number of male and female students who took a computer class as an elective. The double bar graph displays the data for the years 2000 to 2002. Which conclusion is **best** supported by the graph? **MA.E.1.3.1** 28 _____

A Male enrollment is increasing faster than female.
B Female enrollment doubled from 2000 to 2002.
C Male enrollment doubled from 2000 to 2001.
D The rate of increased enrollment is about the same for males and females.



Go on

Name _____ Date _____

Test Practice

Diagnostic Test (continued)

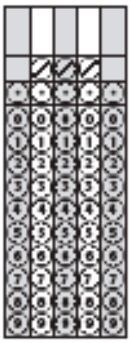
Read each question and choose the best answer. Then write the letter for the answer you have chosen in the blank at the right of each question.

29 Gabriela has a cylindrical bucket that she uses to wash the family car. The bucket has a radius of 7 inches and a height of 12 inches. If she fills it with water to within 2 inches of the top of the bucket, what is the volume of water, in cubic inches, in the bucket? **MA.B.1.3.1** **29** _____

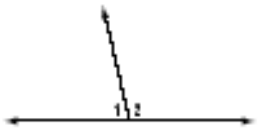
F 7,392 cubic inches
G 6,160 cubic inches
H 1,848 cubic inches
I 1,539 cubic inches

30 The table shows the income Marcus makes on his newspaper route. Each delivery is for an 80-paper route. According to the pattern in the table, how much will Marcus earn after 70 deliveries? **MA.D.1.3.1** **30**

Deliveries	7	21	35	49	63
Income ($)	44.80	134.40	224	313.60	403.20



31 What is $m\angle 2$, in degrees, if $m\angle 1$ is 77? **MA.B.1.3.2** **31** _____



A 13
B 90
C 103
D 167

32 Which piece should be added to the tessellation so that when corner A is placed at the point shown by the arrow, the pattern will continue? **MA.C.2.3.2** **32** _____

F 

G 

H 

I 

Go on

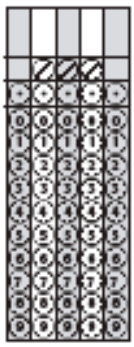
Name _____ Date _____

Test Practice

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.

33 Students can choose photograph packages for their school pictures in 5^4 ways. What is the value of 5^4? **MA.A.2.3.1**

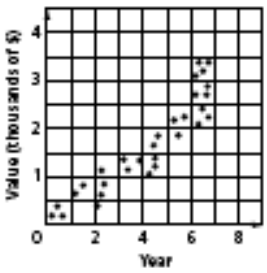
33 

34 Mrs. Gault hired a caterer for the opening of her art gallery. The estimated cost c to cater the opening is given by the graph. Which inequality corresponds to the graph? **MA.D.2.3.1**

34 _____

A $450 \leq c \leq 750$
B $450 < c < 750$
C $450 < c \leq 750$
D $450 \leq c < 750$

35 The scatter plot shows the value of Mr. Stewart's comic book collection over the past 7 years. Which conclusion about the value of the collection is **best** supported by the graph? **MA.E.1.3.1**



35 _____

F The value of the collection is not related to the year.
G The value of the collection has been steady.
H The value has steadily decreased.
I Overall, the value has increased.

36 Benita crocheted a circular scarf that has a diameter of 14 centimeters. If she crochets a second scarf with a diameter of 28 centimeters, how many times greater will the circumference of the second scarf be than the circumference of the first? **MA.B.1.3.3**

36 _____

A half as great
B twice as great
C three times as great
D four times as great

Go on

Name _____ Date _____

Test Practice

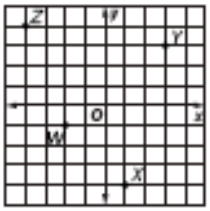
Diagnostic Test (continued)

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.

37 Ramon and Gabi plan to rent a sailboat. If the cost to rent a sailboat can be represented by $25 + 35h$, where h is hours, how much does it cost to rent the sailboat for 6 hours? **MA.D.2.3.2** **37** _____

F $60 **G** $210 **H** $235 **I** $360

38 Which point is located in Quadrant IV? **MA.C.3.3.2** **38** _____



A point W
B point X
C point Y
D point Z

39 Sydney wants to go to St. Andrews State Recreation Area for the family vacation. Her father told her there is a $\frac{3}{4}$ probability they will go to St. Andrews. What are the odds **in favor of** the summer vacation Sydney wants? **MA.E.2.3.2** **39** _____

F 1 to 4 **G** 1 to 3 **H** 3 to 1 **I** 3 to 4

40 Mr. Disch grows and sells pumpkins and other squashes. The figure shows his pumpkin patch. So far, he has harvested 35 pumpkins in the area shown on the diagram. ESTIMATE the number of pumpkins Mr. Disch will harvest, if he harvests about the same amount throughout the patch. **MA.A.4.3.1** **40** _____

A 650 pumpkins **B** 850 pumpkins
C 1,000 pumpkins **D** 1,750 pumpkins

41 The list shows the number of people at a seaside resort who signed up for a tide pool lecture by a marine biologist. The list covers the first 10 days of the summer season. What is the **mode** of the data? 23, 24, 18, 17, 15, 23, 21, 11, 16, 22 **MA.E.1.3.2** **41** _____

F 13 **G** 19 **H** 19.5 **I** 23

Go on

Name _____ Date _____

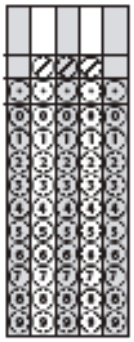
Test Practice

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.

42 The table shows information about the number of adult chaperones required for school field trips. If the school anticipates 91 students for a field trip to Fort Meyers, how many adult chaperones are needed? **MA.D.1.3.2**

Chaperones	3	5	7	9	?
Students	21	35	49	63	91

42 

43 What is the value of $2^8 - 4^3$ in standard notation? **MA.A.2.3.1**

43 

44 How many lines of symmetry are there for the triangle shown? **MA.C.2.3.1**

A 1 **B** 2
C 3 **D** 4

44 _____

45 Mr. Ruiz wants to put an antique finish on all the exterior surfaces of a toy box he made for his children. The rectangular toy box measures 4 feet by 3 feet by 2.5 feet. A pint of the antique finish he wants to use covers 28 square feet. If the finish is sold only in 1-pint cans, how many pints should he buy? **MA.B.1.3.1**

F 1 pint **G** 2 pints
H 3 pints **I** 4 pints

45 _____

Go on

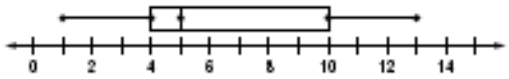
Name _____ Date _____

Test Practice

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 The box-and-whisker plot shows the number of free throw points Krista scored in the basketball games she played this season. What was the range for the number of free throw points? **MA.E.1.3.1** **46** _____



A 8 **B** 10 **C** 12 **D** 13

47 Brad has no more than \$6 to ship a package first class. The cost to ship a package is 37 cents for the first ounce and 23 cents per ounce thereafter. If w is the weight of the package rounded up to a whole number of ounces, which inequality describes the situation? **MA.D.2.3.2** **47** _____

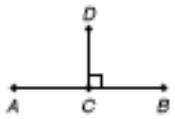
F $0.37 + 0.23(w - 1) \leq 6$ **G** $0.37w + 0.23w \leq 6$
H $0.37 + 0.23(w + 1) \geq 6$ **I** $0.37 + 0.23w \leq 6$

48 Nicole used her mother's Florida punch recipe for open house at Wayside Middle School. The basic recipe calls for 2 quarts of orange juice, 1 quart of grapefruit juice, 1 cup of lime juice, 1 cup of sugar syrup, and 2 cups of ginger ale. How many gallons of punch does the basic recipe make? **MA.B.2.3.2** **48** _____

A 1 gallon **B** 2 gallons **C** 3 gallons **D** 4 gallons

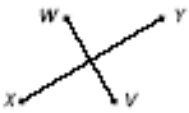
49 Which diagram shows parallel segments? **MA.C.3.3.1** **49** _____

F

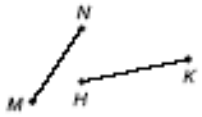


G

H



I



50 Given $4(28 - 2^3) \div 2$, which operation would you perform **first** to follow the correct order of operations? **MA.A.3.3.2** **50** _____

A Multiply 4×28. **B** Divide 12 by 2.
C Subtract 2 from 28. **D** Evaluate 2^3.

STOP