

# New York State Testing Program

# Mathematics Book 2

# May 6–7, 2003

Name

### **T**IPS FOR TAKING THE TEST

Here are some suggestions to help you do your best:

- Be sure to carefully read all the directions in the Test Book.
- Ask your teacher to explain any directions you do not understand.
- Plan your time. You may want to glance quickly through the entire section before you begin answering questions to plan your time.
- You may use your tools to help you solve any problem on the test.
- Read each question carefully and think about the answer before writing a response.
- Be sure to show your work when asked. You may receive partial credit if you have shown your work.
- Use your calculator to help you solve the problems on this part of the test.





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#### FORMULAS

### **Mathematics Reference Sheet**

Rectangular Solid	Total Surface Area = $2(lw) + 2(hw) + 2(lw)$	<i>i</i> )
Right Circular Cylinder	Total Surface Area = $2\pi rh + 2\pi r^2$	Volume = $\pi r^2 h$
Pythagorean Theorem	$c^2 = a^2 + b^2$	
Trigonometric	$sin A = \frac{opposite}{hypotenuse}$ $cos A = \frac{adjacent}{hypotenuse}$	$\tan A = \frac{\text{opposite}}{\text{adjacent}}$

#### TRIGONOMETRIC TABLE

Degrees	Sine	Cosine	Tangent
0	.0000	1.0000	.0000
5	.0872	.9962	.0875
10	.1736	.9848	.1763
15	.2588	.9659	.2679
20	.3420	.9397	.3640
25	.4226	.9063	.4663
30	.5000	.8660	.5774
35	.5736	.8192	.7002
40	.6428	.7660	.8391
45	.7071	.7071	1.0000
50	.7660	.6428	1.1918
55	.8192	.5736	1.4281
60	.8660	.5000	1.7321
65	.9063	.4226	2.1445
70	.9397	.3420	2.7475
75	.9659	.2588	3.7321
80	.9848	.1736	5.6713
85	.9962	.0872	11.4301
90	1.0000	.0000	



**28** Todd made the following measurements of each day's snowfall.

#### SNOWFALL MEASUREMENTS

Day	Snowfall
Friday	3.25 inches
Saturday	5.75 inches
Sunday	2.4 inches

What is the mean snowfall, in inches, for the 3 days shown?

Show your work.

Answer \_\_\_\_\_ inches

Number of Shirts	Cost (in dollars)
1	17
2	29
3	41
4	53
5	65

#### **GIOVANNI'S SHIRT SHOP**

How much would 17 shirts cost?

Show your work.

29

Answer \$ \_\_\_\_\_

\_ \_ \_ \_ \_

On the lines below, explain the process you used to determine your answer.

**30** For a game, Lisa created notes to be handed out. Each note was on blue **or** orange paper and had a "yes" **or** a "no" written in red **or** green letters. No two notes were the same. How many combinations of notes could Lisa have created?

Show your work.

Answer \_\_\_\_\_ combinations

**31** Justin says that if he adds any two negative integers, the result will always be a negative integer, but if he subtracts the same two negative integers, the result will always be a positive integer.

#### Part A

On the lines below, explain why you agree or disagree with Justin's statement.

#### Part B

On the lines below, give one example of adding two negative integers and one example of subtracting the same two negative integers that support your explanation.

Example 1 \_\_\_\_\_

Example 2 \_\_\_\_\_

Go Or

**32** The outboard engine on Jimmy's boat uses a fuel-to-oil mixture in a 50:1 ratio. If Jimmy puts 2.5 gallons of fuel in the tank, how many fluid ounces of oil does he need to add? (1 gallon = 128 fluid ounces)

Show your work.

Answer \_\_\_\_\_\_ fluid ounces

**33** Sweaters were on sale for 20% off of the original price. Kelly bought a sweater on sale that had an original price of \$32.00. The sales tax was 7.25%. How much did Kelly pay for the sweater?

Show your work.

Answer \$ \_\_\_\_\_



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Session 1: Part 2

## Do NOT turn this page until you are told to do so.



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Use your ruler and protractor to help you solve this problem.

Ingrid drew a polygon with 3 sides that has one angle that measures 90 degrees. In the space below, draw the shape that is like the one that Ingrid drew and indicate where the 90 degree angle is located.

What is the most specific name for the polygon that Ingrid drew?

Answer \_\_\_\_\_

**35** The manager of a deli wants to list all of the possible sandwich combinations from the menu shown below.

Bread	Cheese	Meat		
Sourdough	Cheddar	Turkey		
Wheat	American	Ham		
Rye		Pastrami		

#### SANDWICH MENU

#### Part A

Construct a tree diagram that shows the number of possible sandwich combinations using one kind of bread, one kind of cheese, and one kind of meat from the menu.

#### Part B

How many of the different sandwich combinations in your tree diagram above have cheddar cheese?

Answer \_\_\_\_\_ combinations

Session 2

On the line below, arrange these numbers in order from smallest to largest.									
14	-21	3.12	22 5	√ <b>25</b>	0.76	$1\frac{2}{3}$			
Answer									
Explain the proc	ess you use	d to determin	ne your ans	swer.					

**37** The equation below can be used to find the cost, including 8% tax, of *p* pairs of socks. Rachel wants to know how many pairs of socks she can buy for \$8.91. Solve the equation and write your answer on the line below.

1.65p(1.08) = 8.91

Show your work.

Answer \_\_\_\_\_ pairs of socks

Session 2

**38** A window washer leans a ladder up against a wall so that the top of the ladder touches the base of the window, as shown below. The bottom of the ladder is 15 feet from the wall, and the base of the window is 26 feet from the ground.



What is the length of the ladder to the *nearest* foot?

Show your work.

Answer \_\_\_\_\_\_ feet

Session 2

**39** Laura received a box of chocolates for her birthday. The chocolates in the box have five different fillings. The table below shows how many chocolates with each type of filling are in the box.

Filling	Number
Caramel	16
Coconut	10
Mint	12
Cherry	14
Toffee	8

#### CHOCOLATES

The chocolates are all the same shape and size. Laura does *not* like coconut or toffee. What is the probability that Laura will pick a chocolate from the full box that has a filling she *does* like?

#### Probability \_\_\_\_\_

On the lines below, explain the process you used to determine your answer.



The deepest part of the lake is indicated by the unknown depth on the diagram. Based on the 5 depth measurements above, the mean (average) depth of the lake is 46 feet. What is the measurement of the deepest part of the lake?

Show your work.

Answer \_\_\_\_\_\_ feet

Solve the inequality below for y and graph the solution set on the number line provided.

 $3y + 45 \le 54$ 

Show your work.

41



42 What value of x would make the two triangles shown below similar?



[not to scale]

Show your work.

Answer \_\_\_\_\_

**43** The city planning department wants to build a rectangular playing field in one of its parks. The perimeter of the entire field will be fenced, and the total area of the field will be 1,200 square feet.

#### Part A

If the length and the width can only be whole numbers, what dimensions for the playing field will require the minimum number of feet of fencing?

#### Show your work or explain in words.

Dimensions \_\_\_\_\_\_ feet by \_\_\_\_\_\_ feet

What is the perimeter of the playing field with the minimum number of feet of fencing?

Perimeter \_\_\_\_\_ feet

#### Part B

Using the grid and scale below, accurately draw the playing field and label the dimensions.

SCALE	
= 5 feet	

Joey needs to travel 15 miles from Smithville to Clarksville and 5 miles from Clarksville to Elmwood. The table below shows two different taxicab companies' rates.

TAXICAB RATES

Sunshine Cab Co.	Flat rate: \$5.00 + \$1.00 for every 5 miles
Freedom Cab Co.	Flat rate: \$2.50 + \$0.50 for every mile over 10 miles

Joey will choose one of these four options:

- 1. Travel with Sunshine Cab Co. to Clarksville, then with Freedom Cab Co. to Elmwood.
- 2. Travel with Freedom Cab Co. to Clarksville, then with Sunshine Cab Co. to Elmwood.
- 3. Travel nonstop with Sunshine Cab Co. the entire way.
- 4. Travel nonstop with Freedom Cab Co. the entire way.

Which is the *least* expensive way for Joey to make the trip?

#### Show your work.

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Answer \_\_\_\_\_

Use your protractor to help you solve this problem.

Paul's class went to the zoo and counted the various types of animals they saw, as shown in the table below.

Type of Animal	Number Seen
Birds	35
Reptiles	10
Grazing mammals	26
Insects	16
Carnivorous mammals	3

#### **ZOO ANIMALS**

Using your protractor, make an accurate circle graph of the types of animals the class saw.

Be sure to

- label each section of your graph
- title your graph

#### Show your work.



Session 2

SI

Place Student Label Here



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