New York State Testing Program

Mathematics Test
Book 2

Grade **7**

March 6–12, 2008

Name _____

Tips for taking the test

Here are some suggestions to help you do your best:

- Be sure to read carefully all the directions in the test book.
- Read each question carefully and think about the answer before writing your 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.
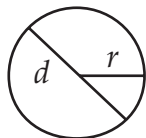
This picture means that you will use your ruler.

This picture means that you will use your protractor.

■ **SECURE MATERIAL** ■
Do not reproduce. Do not discuss contents
until end of designated makeup schedule.

Book 2

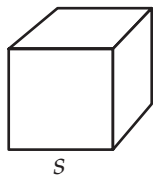**Page 1**

Mathematics Reference Sheet

FORMULAS

Circle
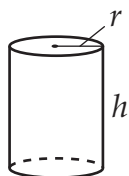
$$\text{Area} = \pi r^2$$

$$\text{Circumference} = 2\pi r$$
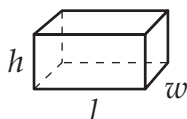
Cube

$$\text{Total Surface Area} = 6s^2$$

$$\text{Volume} = s^3$$

Right Circular Cylinder

$$\text{Total Surface Area} = 2\pi rh + 2\pi r^2$$

$$\text{Volume} = \pi r^2 h$$

Right Rectangular Prism

$$\text{Total Surface Area} = 2wl + 2lh + 2wh$$

$$\text{Volume} = lwh$$
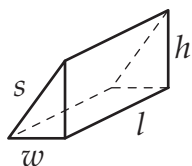
Right Triangular Prism

$$\text{Total Surface Area} = wh + lw + lh + ls$$

$$\text{Volume} = \frac{1}{2}wh \times l$$

CONVERSIONS

1 centimeter = 10 millimeters

1 meter = 100 centimeters = 1,000 millimeters

1 kilometer = 1,000 meters

1 gram = 1,000 milligrams

1 kilogram = 1,000 grams

1 pound = 16 ounces

1 ton = 2,000 pounds

1 cup = 8 fluid ounces

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

1 liter = 1,000 milliliters

1 kiloliter = 1,000 liters

31 The chart below displays the daytime high and the nighttime low temperatures for one Friday in Anchorage, Alaska.

Friday Daytime High	−7°F
Friday Nighttime Low	−16°F

Part A

How many degrees did the temperature drop from the daytime high to the nighttime low?

Answer _____ degrees

Part B

The warmest recorded temperature in Anchorage is 96 degrees higher than the Friday nighttime low temperature. What is the highest recorded temperature for Anchorage, Alaska?

Show your work.

Answer _____ °F

Go On

32 The science teacher at Angela's school is planning a field trip for all her classes. The number of accompanying adults must be proportional to the number of students. For example, if 30 students go on the field trip, there must be 5 adults.

Use the proportion below to determine the number of adults, a, that need to accompany 84 students on the field trip.

$$\frac{30}{5} = \frac{84}{a}$$

Show your work.

Answer _____ adults

33 Write "five less than four times a number" as an algebraic expression.

Expression _____

Evaluate the expression above when the value of the unknown number is 3.

Show your work.

Answer _____

■ **SECURE MATERIAL** ■
Do not reproduce. Do not discuss contents
until end of designated makeup schedule.

Book 2

Page 5

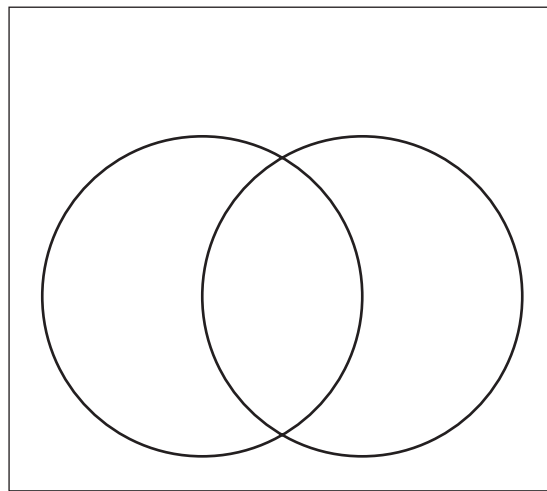**34** Carlotta asks 30 campers which outdoor activity they enjoy. Of these campers, 13 enjoy swimming, 17 enjoy baseball, and 8 enjoy both swimming and baseball.

Complete the Venn diagram using the information above.

Be sure to

- title the diagram
- label each circle
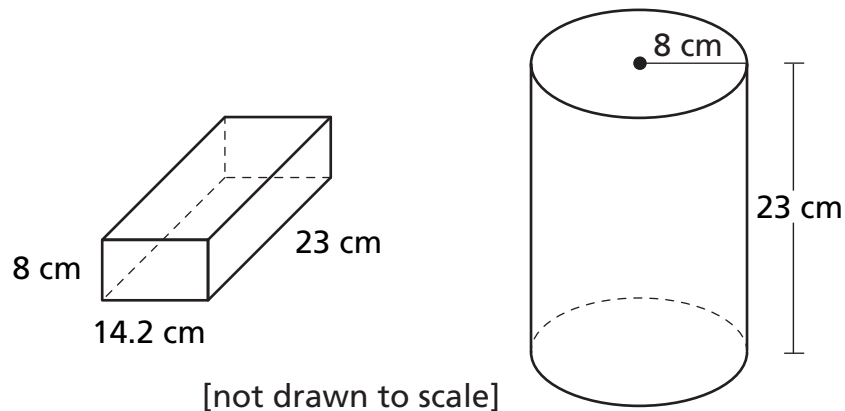- place a number in each section of the diagram

How many campers did **not** select any outdoor activity?

Answer _____ campers

On the lines below, explain how you determined the number of campers who did not select any outdoor activity.

_____

_____

_____

_____

_____

Go On

■ **SECURE MATERIAL** ■
Do not reproduce. Do not discuss contents
until end of designated makeup schedule.

Book 2

Page 7

35 Tricia is choosing a container for her jewelry beads. The containers are shown below.

8 cm

23 cm

8 cm

14.2 cm

23 cm

[not drawn to scale]

Find the volume of the prism. Round your answer to the nearest whole number.

Show your work.

Volume of prism _____ cubic centimeters

Find the volume of the cylinder. Round your answer to the nearest whole number.

Show your work.

Volume of cylinder _____ cubic centimeters

What is the difference in volume between the prism and the cylinder? Round your answer to the nearest whole number.

Answer _____ cubic centimeters

Page 8

36   Write the prime factorization of 84 in exponential form.

Show your work.

Answer _____

■ **SECURE MATERIAL** ■
Do not reproduce. Do not discuss contents
until end of designated makeup schedule.
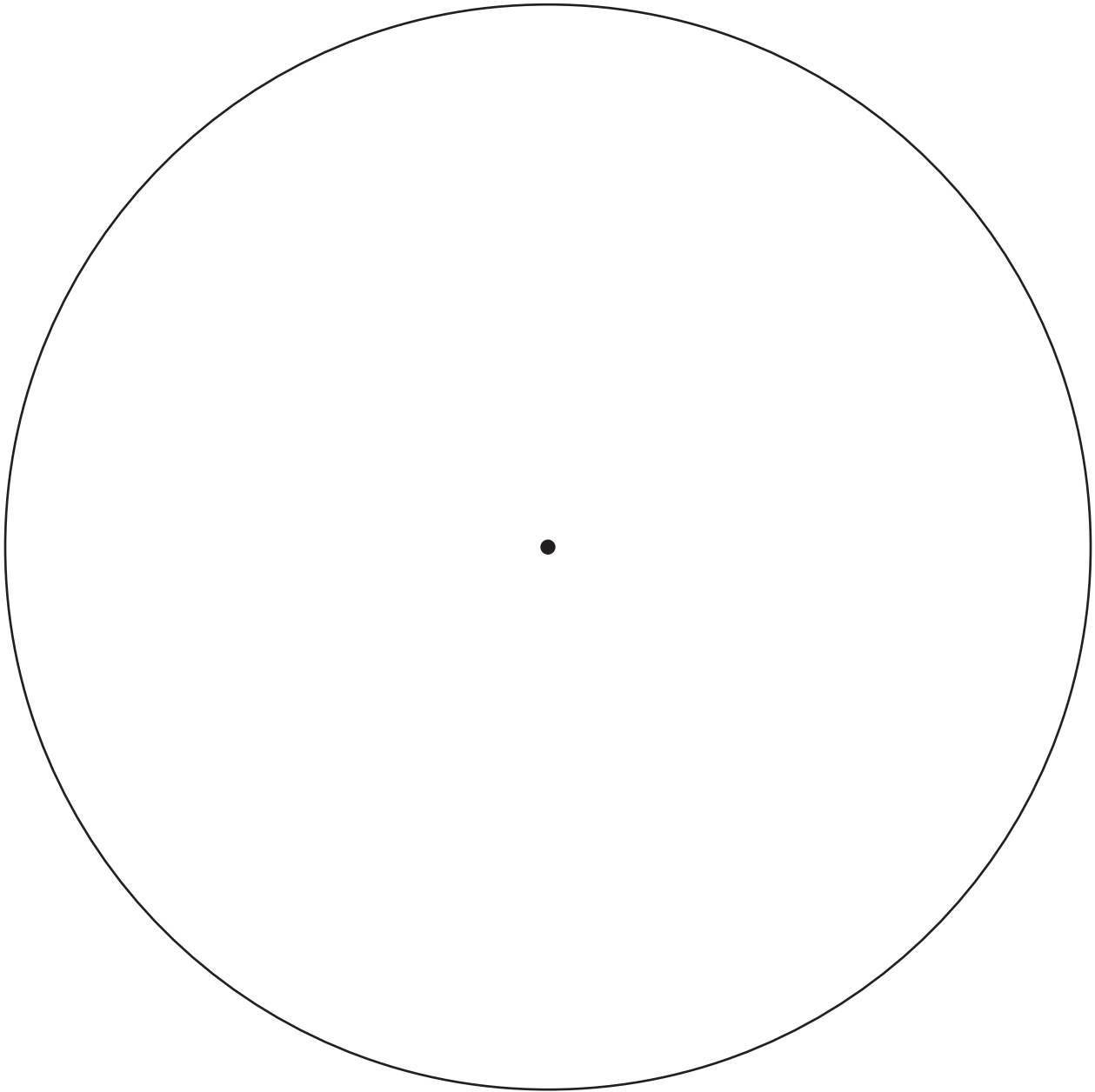
Book 2

Page 9

37 Use your protractor to help you solve this problem.

Dan's classmates use different-color notebooks for different projects. Dan is creating a circle graph representing the number of different-color notebooks. Dan's table shows the angle measure of each sector of his graph.

Color	Angle Measure (in degrees)	Percent of Notebooks
Blue	180°	50%
Yellow	90°	
Red	54°	
Green	36°	

Complete Dan's table by using the given angle measures.

Using information from the table, create Dan's circle graph. Be sure to label the sectors.

Go On

■ SECURE MATERIAL ■
Do not reproduce. Do not discuss contents
until end of designated makeup schedule.

Book 2

Page 11

38 On the calendar below, Mindy recorded the daily high temperature in degrees Fahrenheit (°F) for the first fifteen days in May.

MAY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 77°F	2 80°F	3 65°F	4 61°F	5 65°F	6 71°F	7 82°F
8 87°F	9 70°F	10 71°F	11 86°F	12 86°F	13 86°F	14 70°F
15 87°F	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Part A

Use information from the calendar to complete the temperature frequency table shown below.

DAILY HIGH TEMPERATURES
MAY 1–15

Temperature (°F)	Tally
61–65	
66–70	
71–75	
76–80	
81–85	
86–90	

Part B

Which temperature range occurs most frequently?

Answer _____ °F

Part C

Which temperature range occurs least frequently?

Answer _____ °F

STOP

■ **SECURE MATERIAL** ■
Do not reproduce. Do not discuss contents
until end of designated makeup schedule.

Book 2

Page 13

Grade 7
Mathematics Test
Book 2
March 6–12, 2008