The University of the State of New York

COMPONENT RETEST

IN

MATHEMATICS A

COMPONENT 6
MODULE 1

Friday, April 26, 2002 — 11:00 to 11:50 a.m., only

Print Your Name:

Print Your School's Name:

Print your name and the name of your school in the boxes above. Then turn to the last page of this booklet, which is the answer sheet for Part I. Fold the last page along the perforations and, slowly and carefully, tear off the answer sheet. Then fill in the heading.

Scrap paper is not permitted for any part of this examination, but you may use the blank spaces in this booklet as scrap paper. A perforated sheet of scrap graph paper is provided at the end of this booklet for any question for which graphing may be helpful but is not required. Any work done on this sheet of scrap graph paper will *not* be scored. All work should be written in pen, except graphs and drawings, which should be done in pencil.

This examination has two parts, with a total of nine questions. You must answer all questions in this examination. Write your answers to the Part I multiple-choice questions on the separate answer sheet. Write your answers to the questions in Part II directly in this booklet. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc.

When you have completed the examination, you must sign the statement printed at the end of the answer sheet, indicating that you had no unlawful knowledge of the questions or answers prior to the examination and that you have neither given nor received assistance in answering any of the questions during the examination. Your answer sheet cannot be accepted if you fail to sign this declaration.

Notice . . .

A minimum of a scientific calculator, a straightedge (ruler), and a compass must be available for your use while taking this examination.

DO NOT OPEN THIS TEST BOOKLET UNTIL THE SIGNAL IS GIVEN.

Part I

Answer all questions in this part. Each correct answer will receive 2 credits. No partial credit will be allowed. Record your answers in the spaces provided on the separate answer sheet. [12]

Use this space for computations.

1 The accompanying table shows the probability of the Rockets scoring various numbers of goals against the Stars in a certain hockey game.

Rockets Versus Stars

Number of Goals	Probability of Scoring
0	0.09
1	0.20
2	0.28
3	0.25
4	0.12
5 or more	0.06

What is the probability of the Rockets scoring 3 or more goals in this game?

(1) 0.82

(2) 0.43

(3) 0.25

(4) 0.18

Use this space for computations.

2 How many different 6-letter arrangements can be formed using the six letters in the word "BALLET"?

(1) $\frac{6!}{2!}$

(2) $6!$

(3) $\frac{6!}{4!}$

(4) $\frac{6!}{4!2!}$

3 A bucket contains 4 yellow tennis balls, 3 white tennis balls, and 5 orange tennis balls. What is the probability of randomly drawing an orange ball and then a yellow ball without replacing the orange ball?

(1) $\frac{20}{144}$

(2) $\frac{1}{20}$

(3) $\frac{20}{132}$

(4) $\frac{9}{23}$

4 At an ice cream shop, sundaes are made with vanilla ice cream by combining two different kinds of toppings out of a total of eight different toppings. How many different kinds of sundaes can be made?

(1) 32

(2) 28

(3) 16

(4) 4

5 Mike has 10 books. He has room on his bookshelf for only 4 books. In how many ways can he choose 4 of the 10 books?

Use this space for computations.

(1) 24

(2) 210

(3) 5,040

(4) 151,200

6 Raul and Marina each randomly pick an integer from 1 to 10. What is the probability that Raul's number is divisible by 3 and that Marina's number is odd?

(1) $\frac{8}{100}$

(2) $\frac{15}{100}$

(3) $\frac{1}{10}$

(4) $\frac{8}{10}$

Part II

Answer all questions in this part. Each correct answer will receive 4 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. [12]

7 Dominic was using a red, white, and blue circular spinner to study probability. The table below shows the results he got after 100 spins.

Spinner Results

Color	Number of Spins
red	27
white	49
blue	24

Sketch a circular spinner with three sections, and label each section red, white, or blue to reflect the results in the table. Explain how you determined the size of each section.

8 Alex's piggy bank contains 40 coins. There are twice as many quarters as nickels, and five times as many dimes as nickels. If a coin is shaken from the bank, what is the probability that it is a quarter?

9 Jenna is asked to read two books for her New York State history course. She has seven books to choose from: three on modern history and four on pre-1800 history. She is having trouble deciding which two to select. She writes each book title on a piece of paper and draws out two pieces of paper without replacing the first one. Draw a tree diagram or list the sample space to show all possible two-book combinations that Jenna could choose. Use your tree diagram or sample space to determine the probability that both books will be on modern history.

Scrap Graph Paper - This sheet will *not* be scored.

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MATHEMATICS A

COMPONENT 6 MODULE 1

Friday, April 26, 2002 — 11:00 to 11:50 a.m., only

ANSWER SHEET

Student . . . . . Sex: ☐ Male ☐ Female

School . . . . . Teacher . . . . . .

Your answers to Part I should be recorded on this answer sheet.

Part I

Answer all 6 questions in this part.

1_____

2_____

3_____

4_____

5_____

6_____

Score: ☐

Your answers for Part II should be written in the test booklet.

The declaration below should be signed when you have completed the examination.

I do hereby affirm, at the close of this examination, that I had no unlawful knowledge of the questions or answers prior to the examination and that I have neither given nor received assistance in answering any of the questions during the examination.

_____

Signature

MATHEMATICS A			
Question	Maximum Credit	Credits Earned	Rater's/Scorer's Initials
Part I 1-6	12		
Part II 7	4		
8	4		
9	4		
Maximum Total	24		
		Total Raw Score	Checked By

Rater's/Scorer's Name (minimum of three)

Notes to raters . . .

- **Each paper should be scored by a minimum of three raters.**
- **The table for converting the total raw score to the scaled score is provided in the scoring key for this examination.**
- **The scaled score is the student's final examination score.**