

COMPONENT 6

The University of the State of New York

COMPONENT RETEST

IN

MATHEMATICS A

COMPONENT 6

MODULE 2

Monday, April 29, 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.

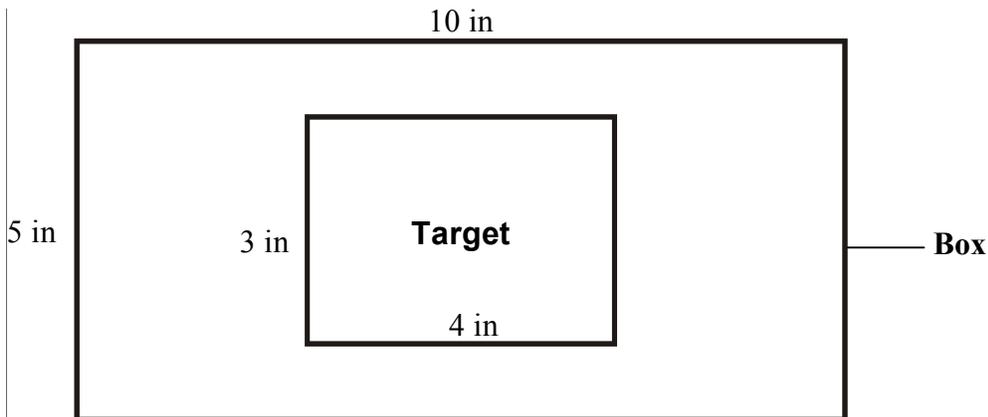
DO NOT OPEN THIS TEST BOOKLET UNTIL THE SIGNAL IS GIVEN.

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]

- 1 A rectangular target that measures 3 inches by 4 inches is drawn at the bottom of a box with a 5-inch by 10-inch rectangular bottom, as shown in the accompanying diagram.

Use this space
for computations.



If Iko tosses a coin into the box without looking, what is the probability that the coin will land on the target?

- (1) $\frac{6}{25}$
(2) $\frac{3}{5}$
(3) $\frac{7}{15}$
(4) $\frac{3}{4}$

**Use this space
for computations.**

- 2 Jason has a 3-digit combination lock on his bike. Each digit can be any number from 0 to 9. He can only remember the first two digits. What is the probability that he will guess the third digit correctly on the first try?

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

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

(3) $\frac{1}{9}$

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

- 3 Helene is packing for camp. She has 6 T-shirts, 2 sweatshirts, 4 pairs of shorts, and 2 pairs of jeans. How many different outfits of 1 top and 1 bottom can she choose?

(1) 14

(2) 36

(3) 48

(4) 96

- 4 The probability of it raining today is $\frac{3}{10}$. What is the probability of it *not* raining today?

(1) 0

(2) $\frac{2}{5}$

(3) $\frac{3}{7}$

(4) $\frac{7}{10}$

- 5 If a room has six doors, in how many different ways can a person enter through one door and leave by a different door?

- (1) 6
- (2) 25
- (3) 30
- (4) 36

**Use this space
for computations.**

- 6 A vegetable packing company fills freezer bags with vegetables for its stir-fry mix. Most of the bags contain the stated weight, but some bags are overfilled and some bags are underfilled. A check of 4,000 packages noted the following data:

Weight of Package	Number of Packages
Stated Weight	3,548
Underfilled	246
Overfilled	206

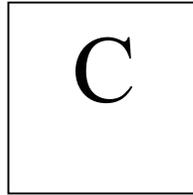
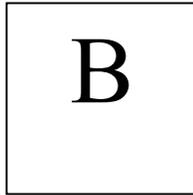
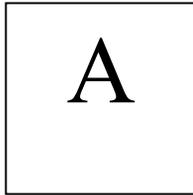
What is the probability that a package chosen at random is either underfilled or overfilled?

- (1) $\frac{246}{3,548}$
 - (2) $\frac{452}{3,548}$
 - (3) $\frac{452}{4,000}$
 - (4) $\frac{3,548}{4,000}$
-

Part II

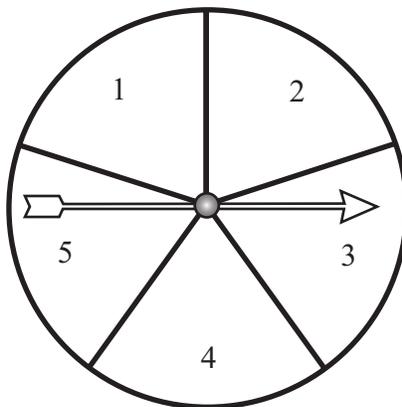
Answer all questions in this part. Each correct answer will receive 4 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. [12]

- 7 The following cards are placed face down on a table in random order.



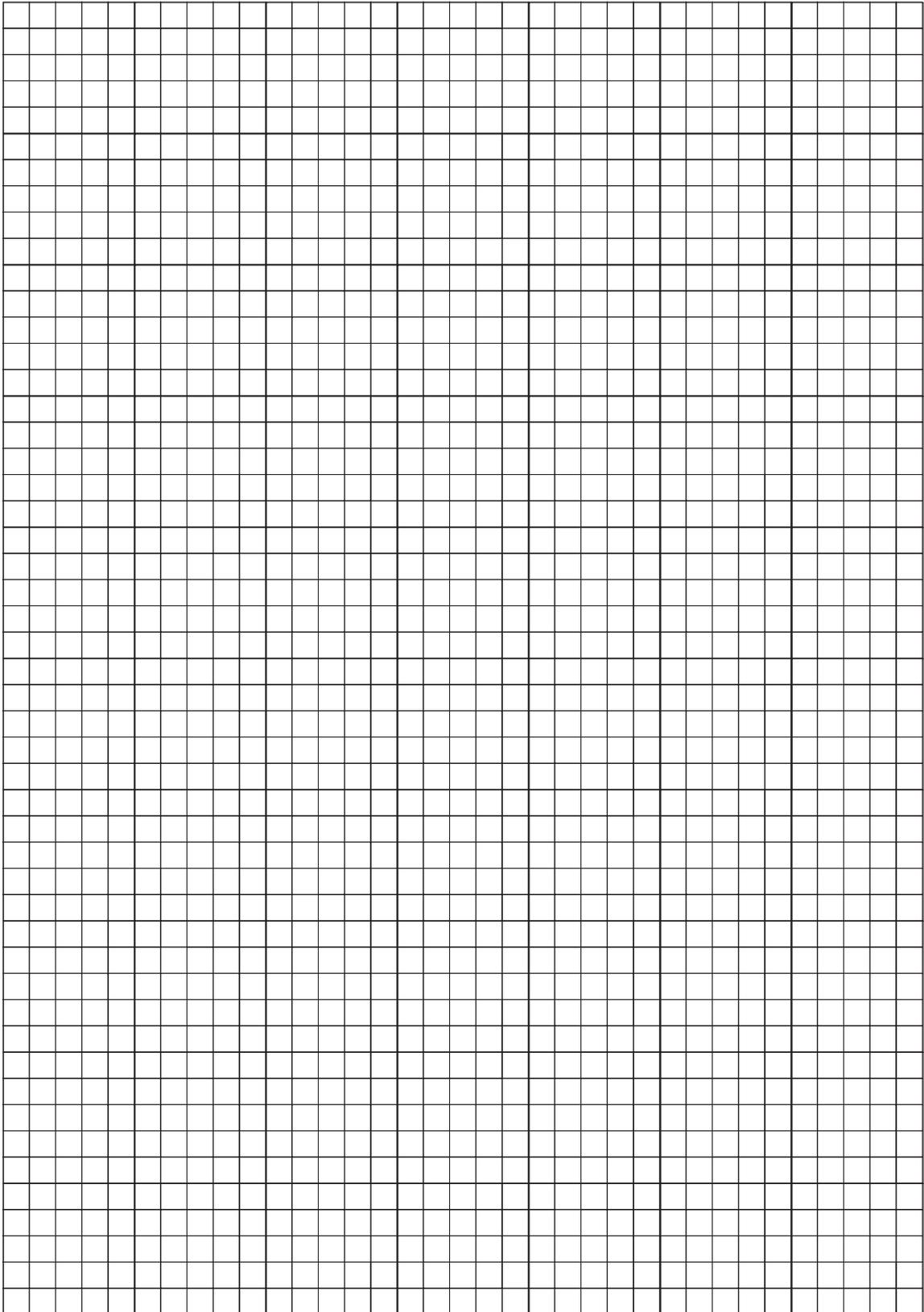
Teresa is told to turn the three cards over one at a time. Draw a tree diagram or list a sample space for all possible arrangements of cards. Find the probability that the cards are turned over in alphabetical order.

- 8 Skyler is using the fair spinner shown in the accompanying diagram to play a game. The spinner is divided into five equal parts numbered 1, 2, 3, 4, and 5, respectively. In the game, Skyler will spin the spinner two times. The sum of her two spins must equal five. Draw a tree diagram or list the sample space for all possible outcomes of the two spins. What is the probability that Skyler will win the game?

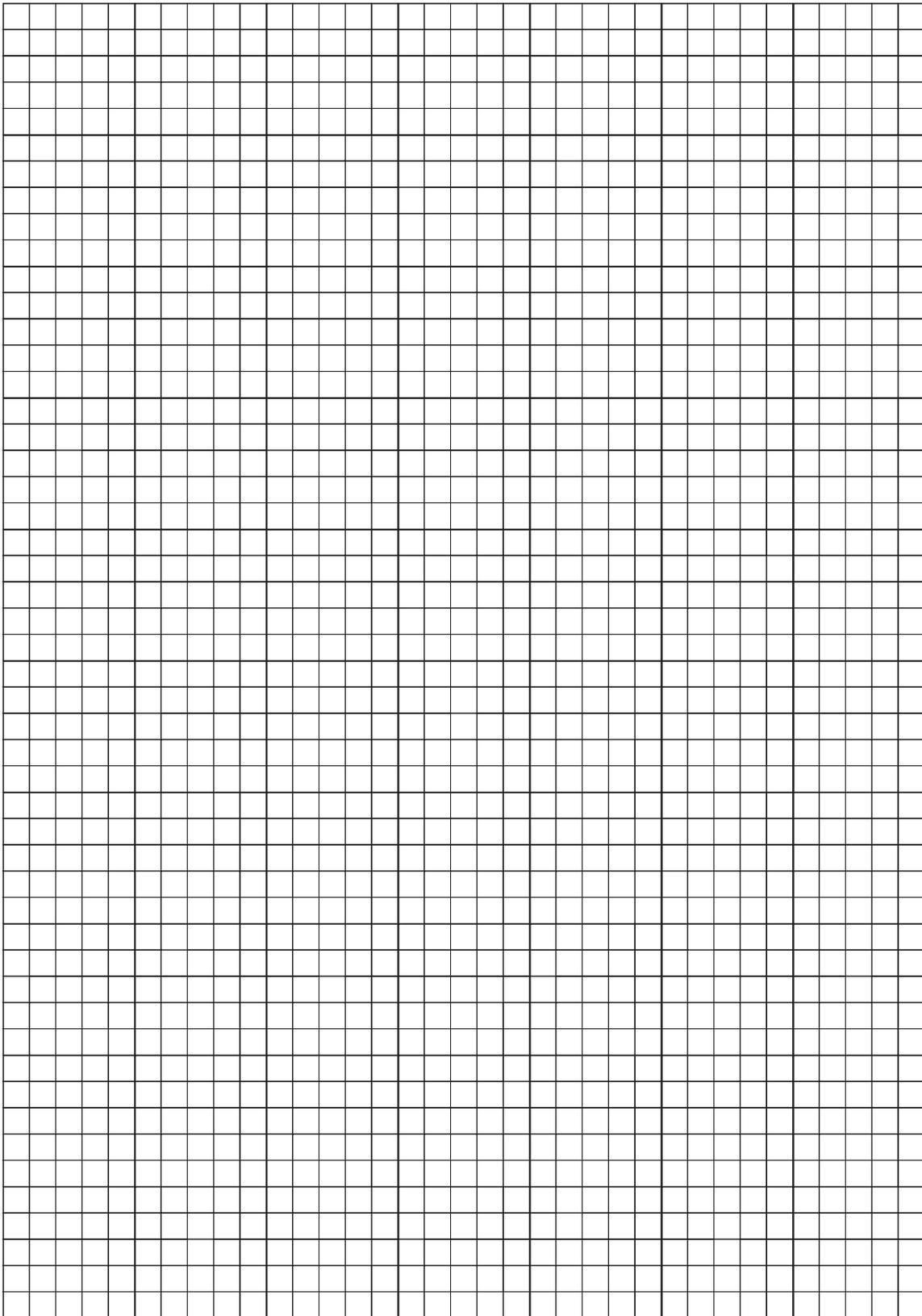


- 9 April collected twenty old public transportation tokens, which she keeps in a small bag. Half of the tokens are made of nickel, and the other half are made of copper. Three nickel and three copper tokens are pierced. If April randomly selects one token from her bag, what is the probability that she will select a nickel token or a pierced token?

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



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COMPONENT 6 MODULE 2

Monday, April 29, 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

