

# COMPONENT 5

The University of the State of New York

## COMPONENT RETEST

IN

## MATHEMATICS A

### COMPONENT 5

### MODULE 1

Wednesday, April 24, 2002 — 1:00 to 1:50 p.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.

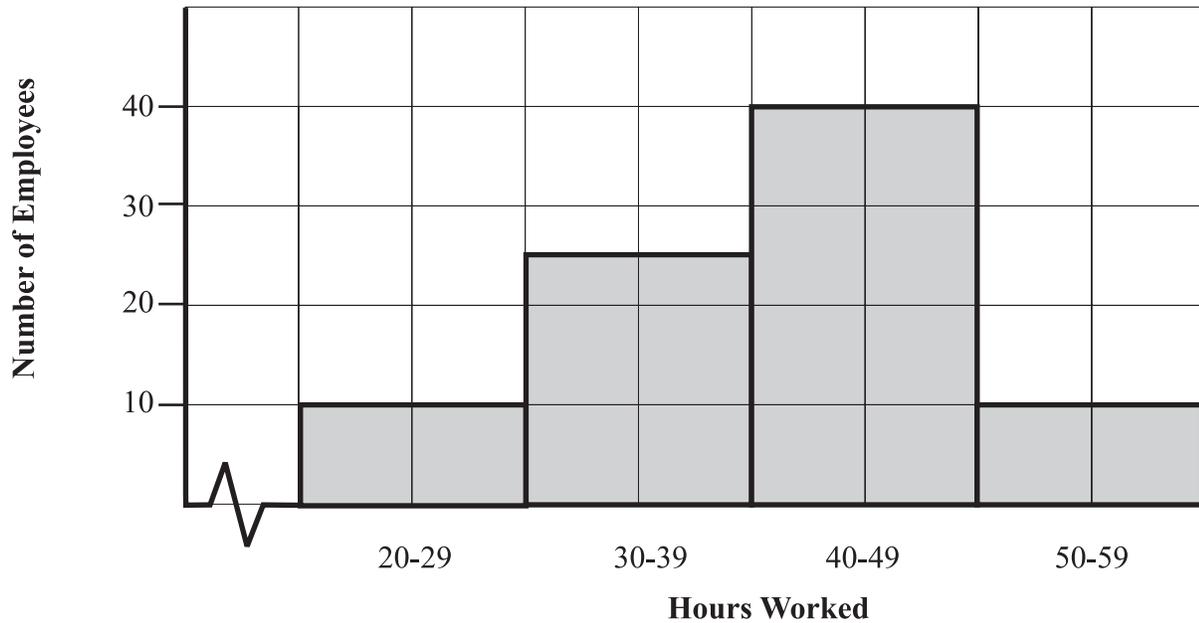
**DO NOT OPEN THIS TEST BOOKLET UNTIL THE SIGNAL IS GIVEN.**

**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 The histogram below shows the hours worked by employees at a factory during a particular week.

**Use this space  
for computations.**



How many employees worked *at least* 40 hours?

- (1) 37
- (2) 40
- (3) 50
- (4) 87

**Use this space  
for computations.**

2 What is the distance between point  $A(-6,2)$  and point  $B(8,4)$ ?

- (1)  $\sqrt{36}$
- (2)  $\sqrt{40}$
- (3)  $\sqrt{60}$
- (4)  $\sqrt{200}$

3 Which equation represents a line that passes through points  $(0,3)$  and  $(-4,1)$ ?

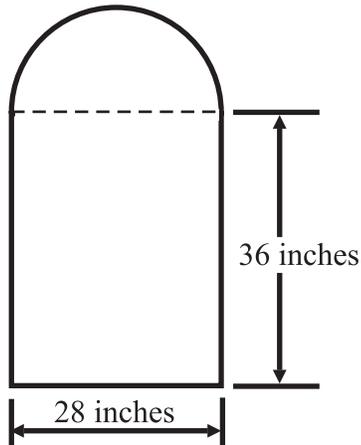
- (1)  $y = \frac{1}{2}x + 3$
- (2)  $y = -\frac{1}{2}x + 3$
- (3)  $y = 3x + \frac{1}{2}$
- (4)  $y = 3x - \frac{1}{2}$

4 In 1998, there were 2,988 million pounds of toxic chemicals released in the United States. The land area of Texas is approximately 7.6% of the total United States land area. If the amount of toxic chemicals released in Texas was proportionate to the land area of the state, approximately how many million pounds of toxic chemicals were released in Texas in 1998?

- (1) 23
- (2) 76
- (3) 200
- (4) 227

- 5 The accompanying diagram shows the design for a window. The top of the window is a semicircle. The bottom is a rectangle, with a width of 28 inches and a height of 36 inches. A strip fits tightly around the perimeter of the entire window.

**Use this space  
for computations.**



Which measurement is the closest approximation of the length of this strip?

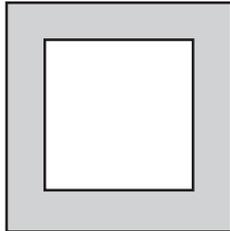
- (1) 100 in
  - (2) 144 in
  - (3) 188 in
  - (4) 1,008 in
- 6 What is the value of  $|4 - x|$ , if  $x = 10$ ?
- (1) 6
  - (2) -6
  - (3) 14
  - (4) -14

## 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 Terrell has a set of 2-inch by 2-inch by 2-inch cubic blocks. He also has a box with inside dimensions of 16 inches by 12 inches by 8 inches. How many blocks will fit into Terrell's box?

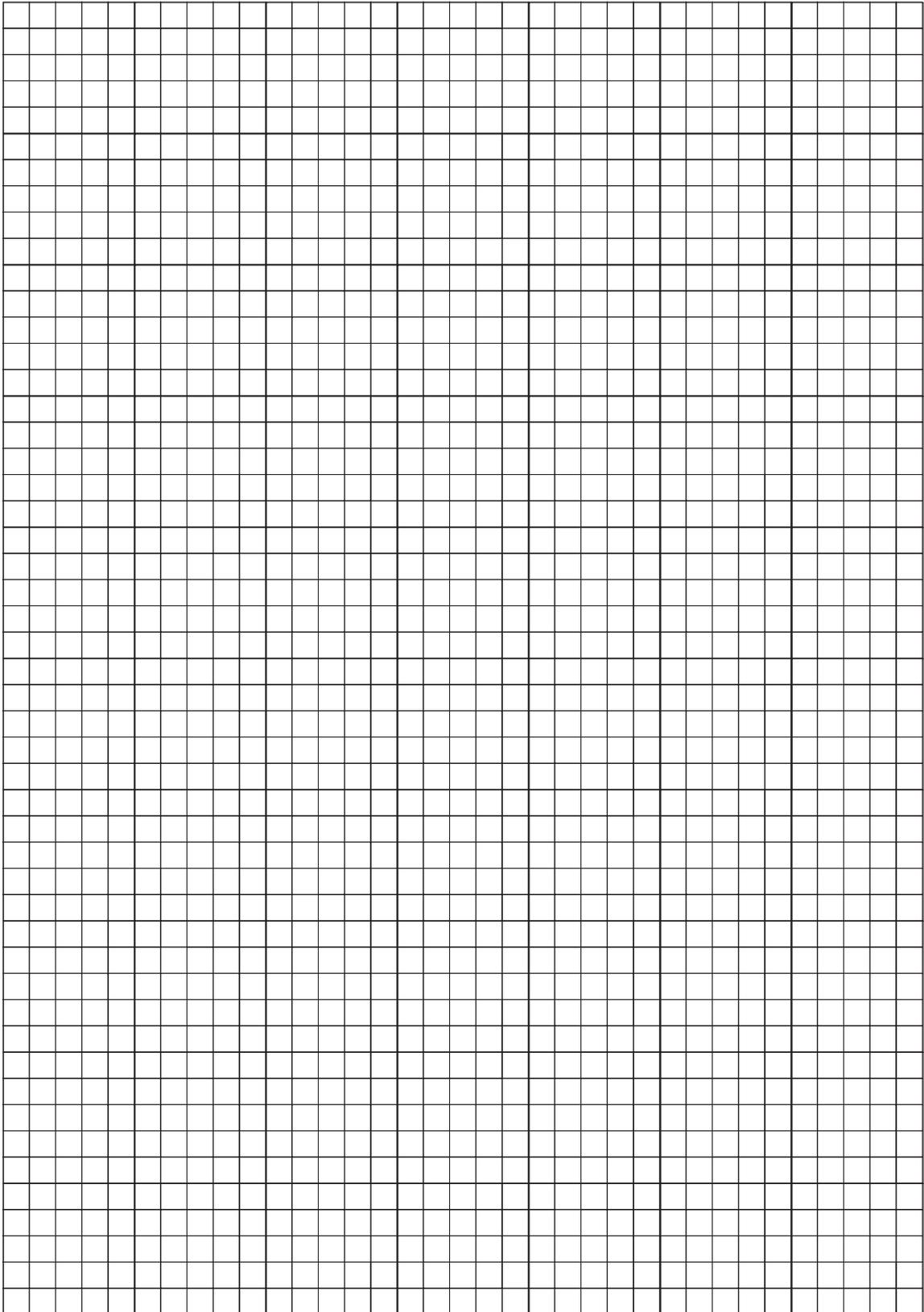
- 8 In the accompanying diagram, the length of a side of the outer square is 1.5 times the length of a side of the inner square. The perimeter of the inner square is 8 units. What is the area of the shaded region, in square units?



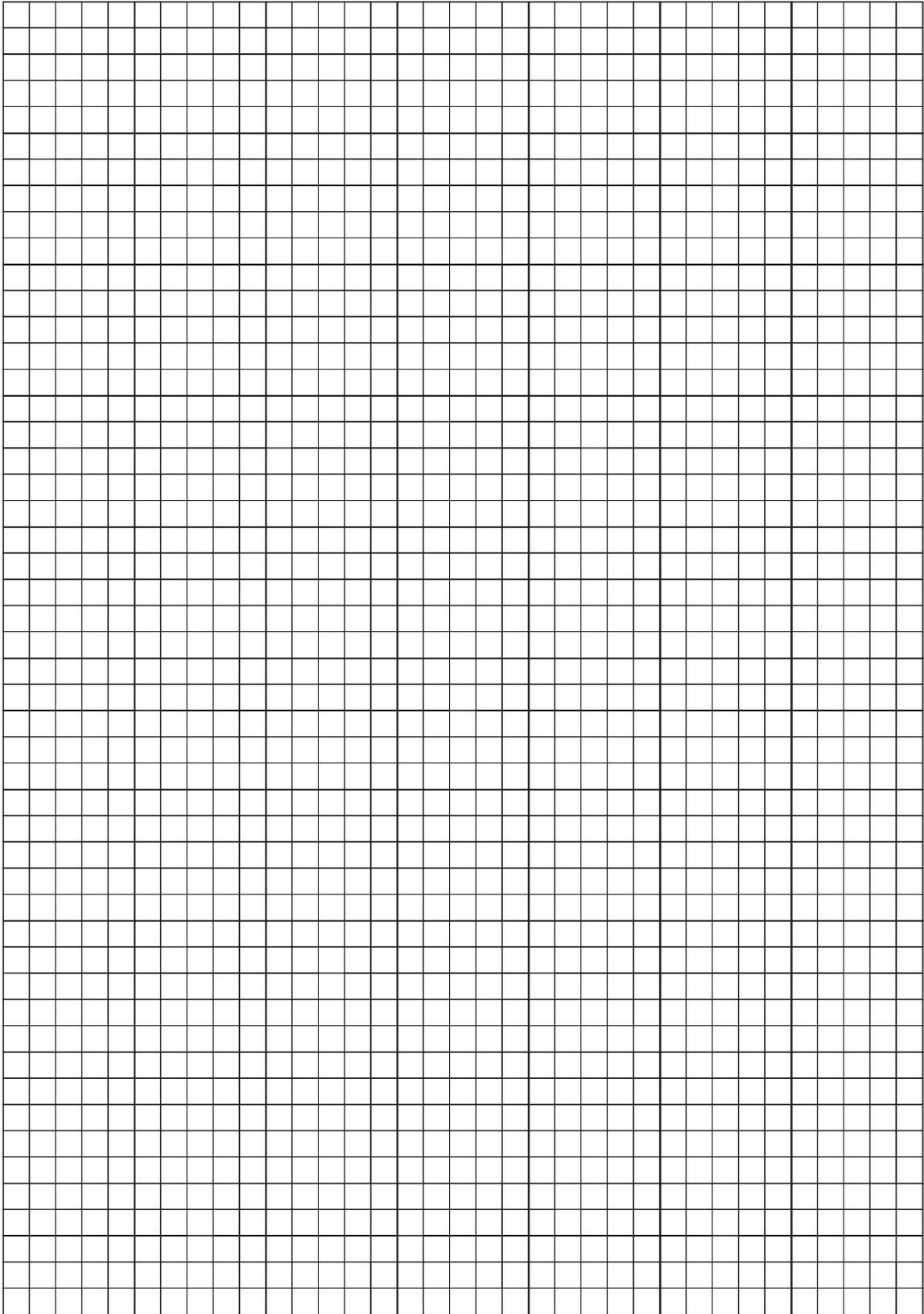
- 9 Scientists caught and tagged 600 fish in a lake in April. In May, the scientists caught 800 fish. Of those fish, 10 were previously tagged. The ratio of previously tagged fish to the total number of fish caught in May is the same as the ratio of the number of fish caught and tagged in April to the total number of fish in the lake in April. Approximately how many fish were in the lake in April?



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



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**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.

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**Signature**

