

TCAP

HIGH SCHOOL: GEOMETRY

**TENNESSEE COMPREHENSIVE
ASSESSMENT PROGRAM**



CONSTRUCTED RESPONSE ASSESSMENT

2013-2014 PHASE ONE

STUDENT NAME _____

UNIQUE STUDENT ID# _____

TEACHER NAME _____

This test booklet does not contain a demographics page.
Student demographics and scores can be entered online at
<http://state2.measinc.com/we/signin.aspx>
Select the CRA scoring application.

GEOMETRY

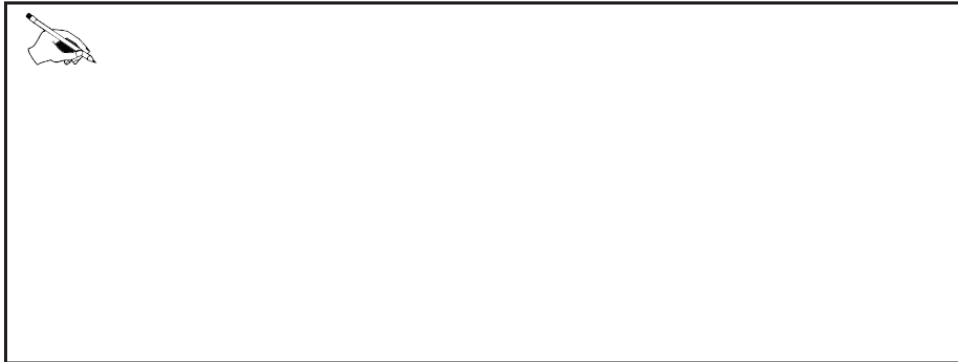
Student Directions

Please listen carefully and follow along as your teacher reads the directions.

Today you will be taking the Constructed Response Assessment for Mathematics. The test is made up of three tasks. You will have 60 minutes to complete the test.

There are some important things to remember as you complete test:

- Read each task carefully and think about the best way to answer it. You may be asked to respond to tasks using words, numbers, drawings, equations, and/or diagrams.
- Write your answers in the text boxes or spaces provided. Please write or print your answers legibly. An example text box is below.



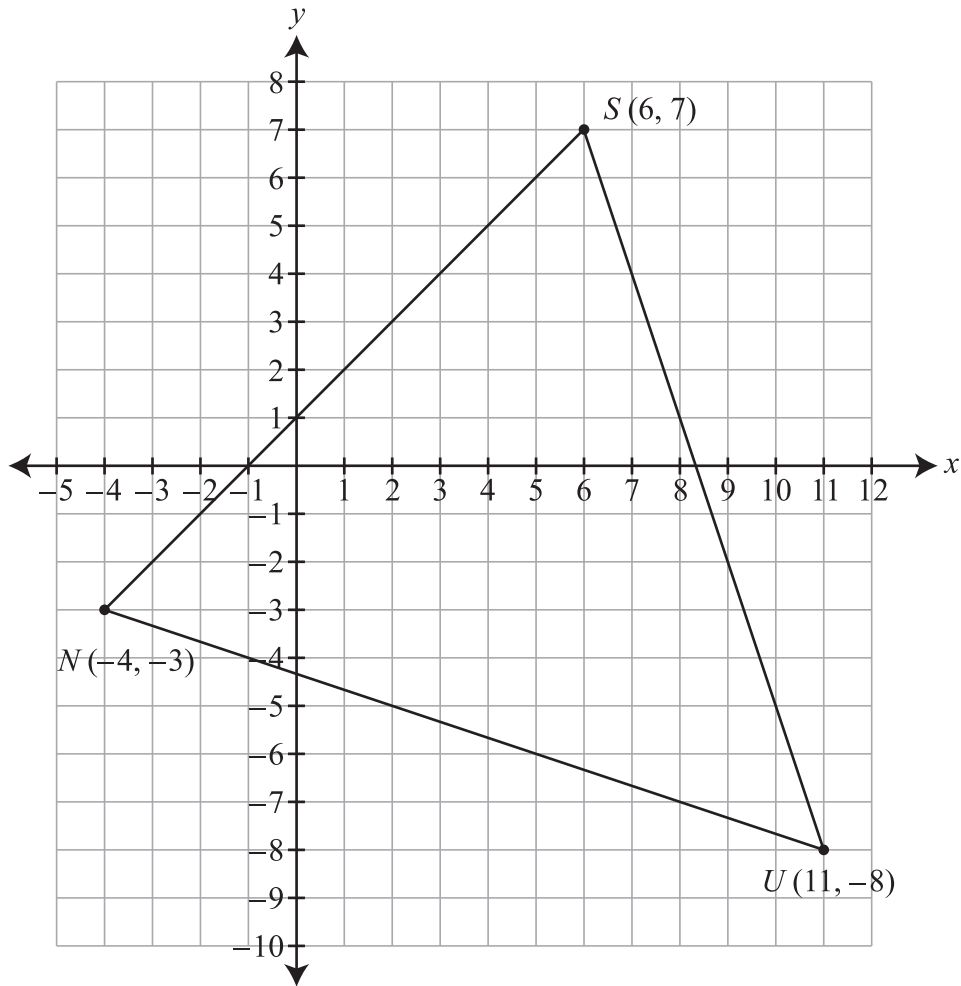
- Be sure to show all of your work. In the event that you are not able to fit an answer in the appropriate answer box, you may continue the answer outside the box. All parts of your answer will be scored.
- If you do not know the answer to a task, skip it and go on to the next task. You may return to it later if there is time.
- If you complete your test before time is called, you may go back and review your answers.
- You have 60 minutes to complete the test.



**DO NOT TURN
THE PAGE UNTIL
TOLD TO DO SO.**

Constructed Response Assessment

Congruent Triangles Task

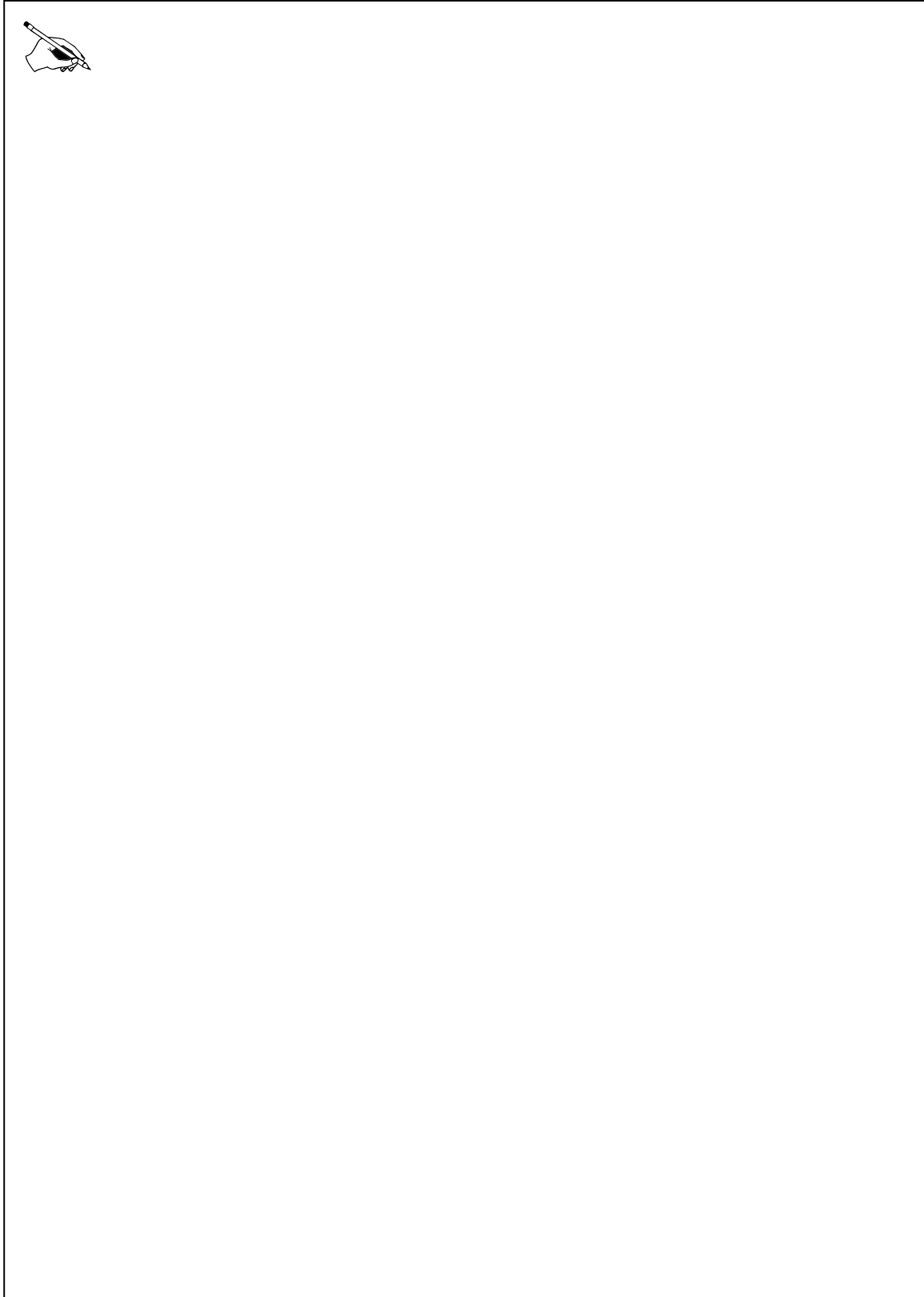


- a. Locate and label point M on \overline{SU} such that it is $\frac{2}{5}$ of the distance from point S to point U .
Locate and label point T on \overline{SN} such that it is $\frac{2}{5}$ of the distance from point S to point N .
Locate and label point Q on \overline{NU} such that it is $\frac{2}{5}$ of the distance from point N to point U .



Constructed Response Assessment

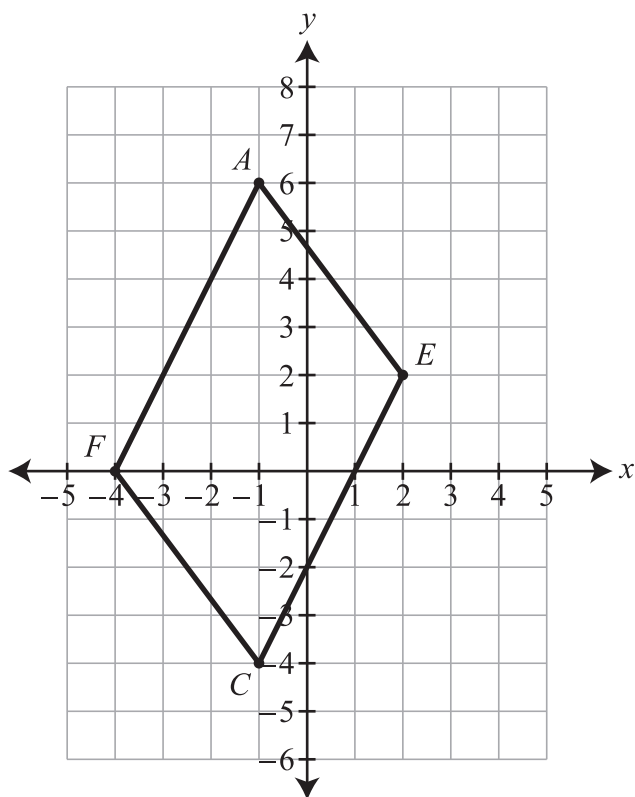
- b. Are triangles TNQ and QMT congruent? Prove why or why not.



Constructed Response Assessment

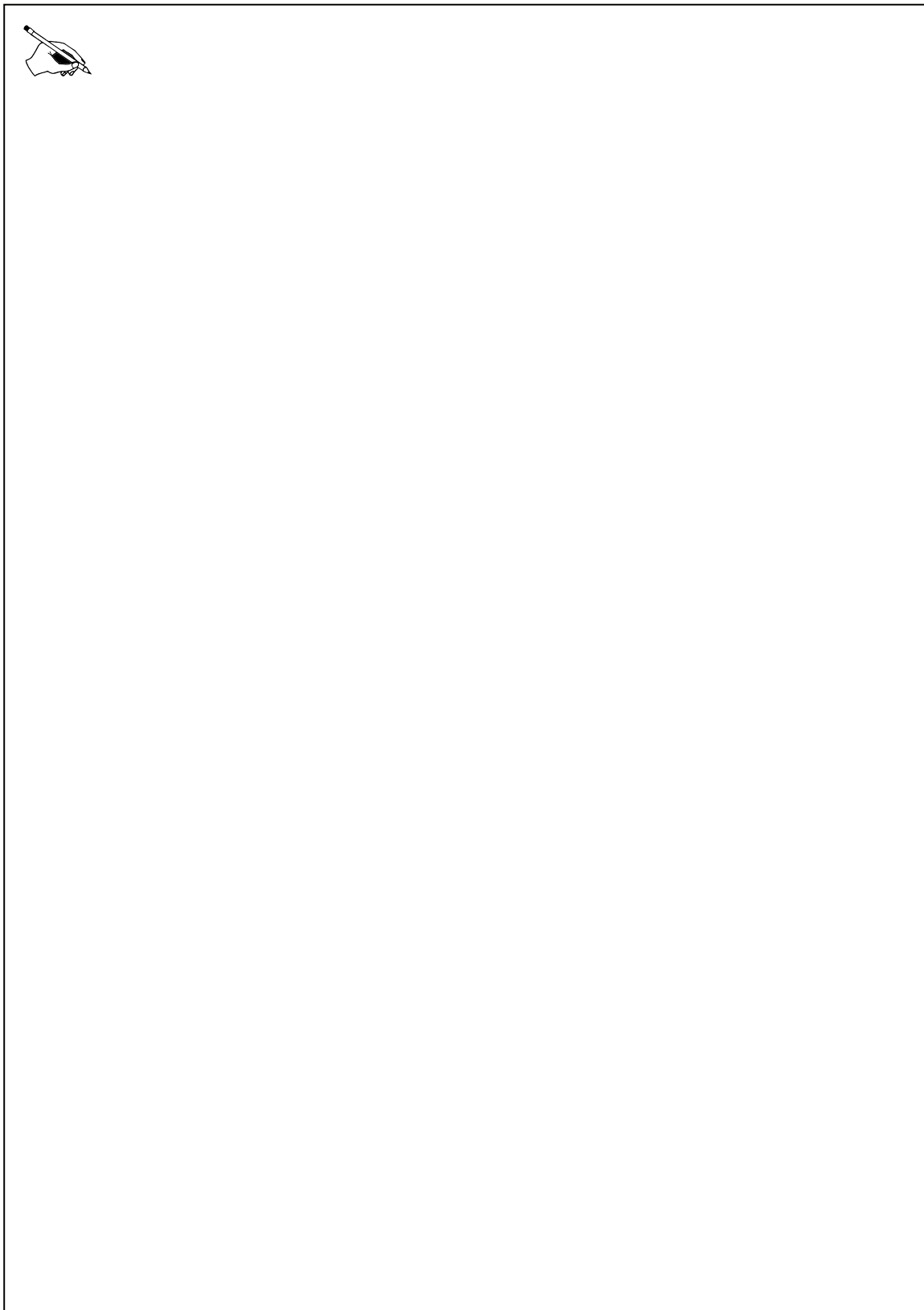
Park City Task

Park City is laid out on a grid like the one below, where each line represents a street in the city, and each unit on the grid represents one mile. Four other streets in the city are represented by \overline{FA} , \overline{AE} , \overline{EC} , and \overline{CF} .




Constructed Response Assessment

- a. Dionne claims that the figure formed by \overline{FA} , \overline{AE} , \overline{EC} , and \overline{CF} is a parallelogram. Do you agree or disagree with Dionne? Support your answer with a proof of whether the figure is or is not a parallelogram.




Constructed Response Assessment

- b. Triangle AFE encloses a park located in the city. Describe in words two methods that use coordinates from the diagram to determine the area of the park.



A large rectangular box for writing the answer to question b. In the top-left corner, there is a small icon of a hand holding a pencil.

- c. Find the *exact* area of the park.



A large rectangular box for writing the answer to question c. In the top-left corner, there is a small icon of a hand holding a pencil.



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Constructed Response Assessment

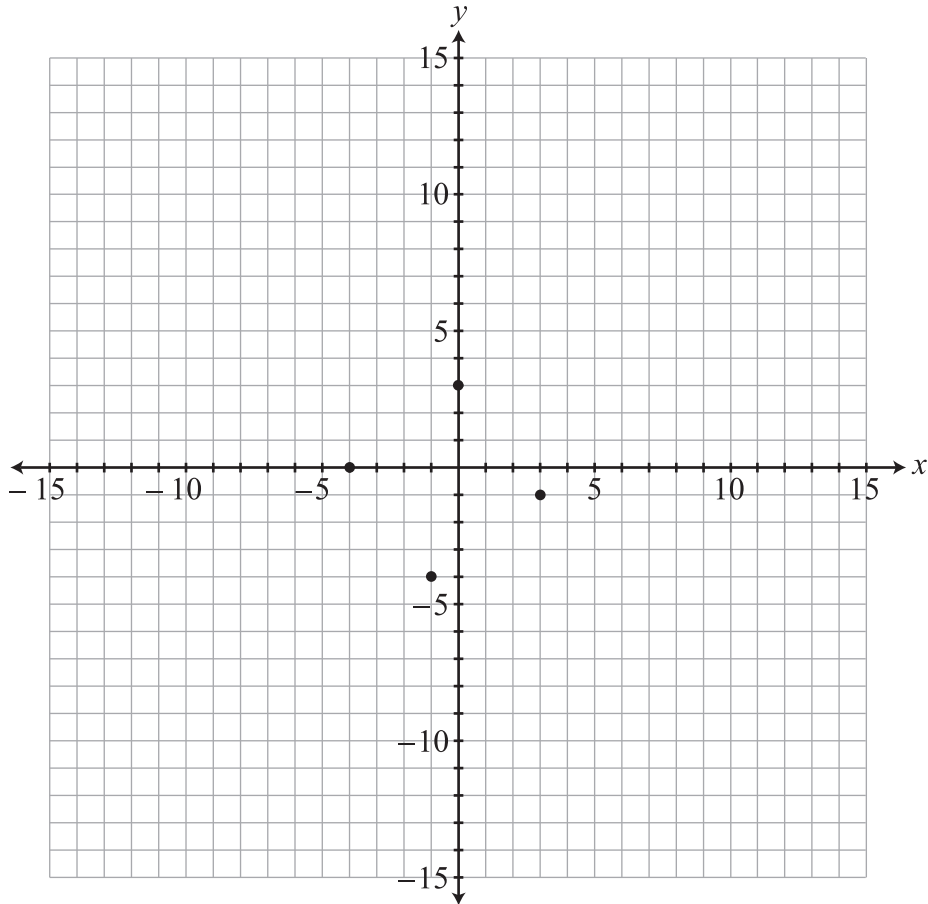
Lucio's Ride Task

When placed on a grid where each unit represents one mile, State Highway 111 runs along the line

$$y = \frac{3}{4}x + 3, \text{ and State Highway 213 runs along the line } y = \frac{3}{4}x - \frac{13}{4}.$$

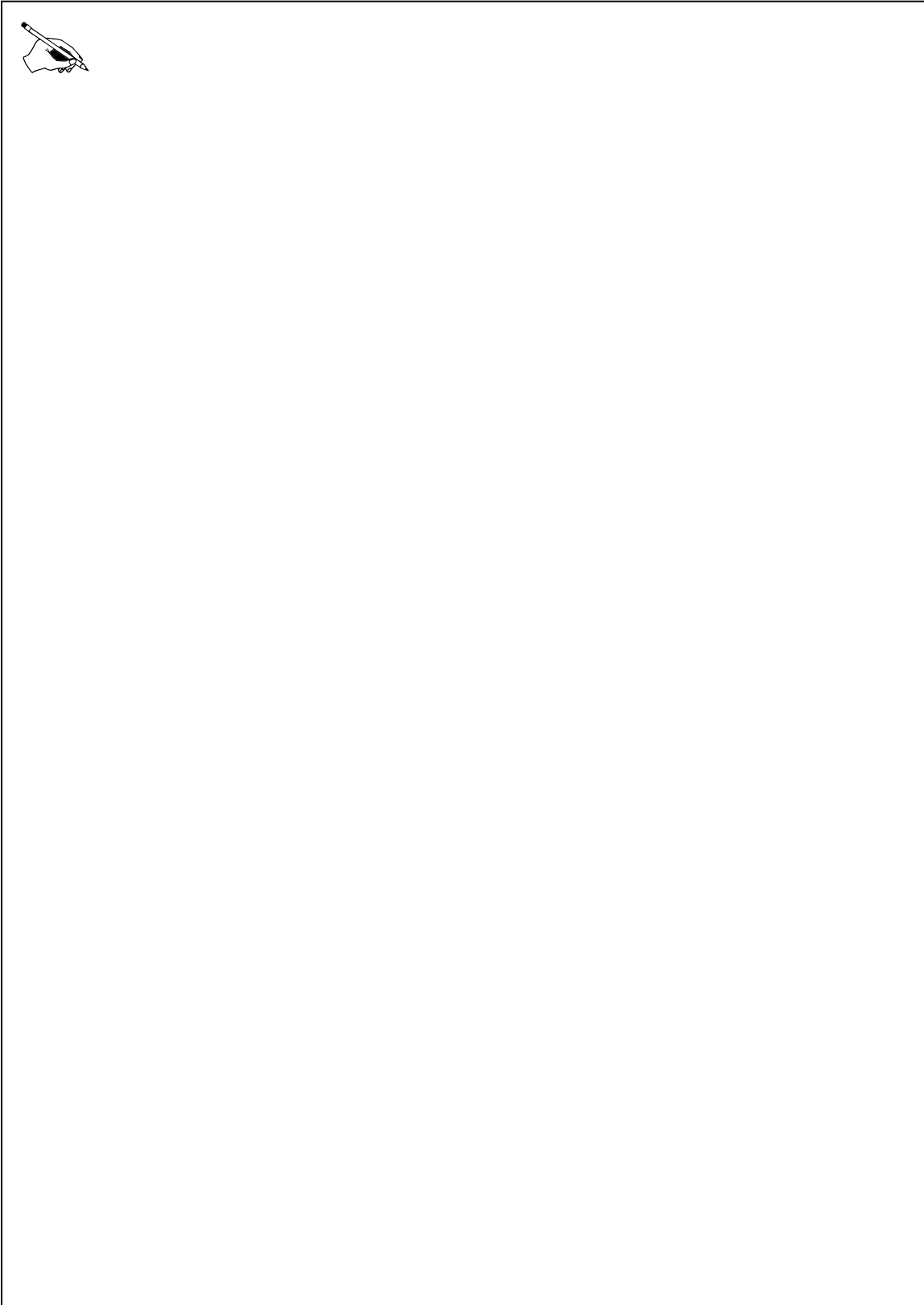
The following locations are represented by points on the grid:

- Lucio's house is located at $(3, -1)$.
- His school is located at $(-1, -4)$.
- A grocery store is located at $(-4, 0)$.
- His friend's house is located at $(0, 3)$.



Constructed Response Assessment

- a. Is the quadrilateral formed by connecting the four locations a square? Prove why or why not. Use slopes as part of the proof.



Constructed Response Assessment

- b. Lucio is planning to ride his bike tomorrow. In the morning, he plans to ride his bike from his house to school. After school, he will ride to the grocery store and then to his friend's house. Next, he will ride his bike home. The four locations are connected by roads. How far is Lucio planning to ride his bike tomorrow if he plans to take the shortest route? Support your response by showing the calculations used to determine your answer.



**REVIEW YOUR
WORK IF YOU
HAVE TIME.**

**DO NOT WRITE ON
THIS PAGE.**

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THIS PAGE.**

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GEOMETRY

STUDENT NAME: _____

TEACHER NAME: _____

