

LESSON 27: Polygons in the Coordinate Plane

Here is the key to **S342**.

Homework

Name _____ Date _____

~~Daniel was riding his bicycle to his friend Robert's house.~~ | On a map, Daniel's house is located at the point (3, 6). | Before going to Robert's house, he rode his bike to the library which is represented by the point (3, -2) on the map. | Daniel left the library and went straight to Robert's house which is located at the point (-5, -3). | Robert and Daniel then rode their backs back to Daniel's house taking the shortest route possible. | What shape is formed by the path that Daniel rode on his bike? If each unit represents 1 mile, what is the area covered by the shape?

S Underline the question.

This problem is asking me to find **the shape of the path that Daniel rode and the area of the shape.**

O Identify the facts.

Eliminate the unnecessary facts.

List the necessary facts. **Each unit: 1 mile**

Daniel's House: (3, 6) Library: (3, -3) Robert's House: (-5, -3)

L Write in words what your plan of action will be. **Plot the three given points. Draw a line from Daniel's house to the library, from the library to Robert's house and a line from Robert's house to Daniel's house. Identify the shape area of the shape that Daniel rode.** Choose an operation or operations. **Multiply**

V Estimate your answer. **A triangle, About 20 sq. mi.**

Carry out your plan.

The shape is a right triangle. I can find the area by multiplying the base times the height and dividing by two. ($6 \times 8 \div 2 = 24$ sq. miles)

E Does your answer make sense? (Compare your answer to the question.) **Yes, because we identified the shape and number of square miles in the area of the triangle.**

Is your answer reasonable? (Compare your answer to the estimate.)

Yes, because 24 square miles is close to my estimate of about 20 square miles. Is your answer accurate? (Check your work.) **Yes**

Write your answer in a complete sentence. **The shape of the route he rode is a triangle. The area of the triangle is 24 square miles.**

