County Concerns *M014 scoring rubric*

Math Domain

☑ Number/Quantity	☑ Shape/Space	☐ Function/Pattern
☐ Chance/Data	☐ Arrangement	

Math Actions (possible weights: 0 through 4)

2 Modeling/Formulating	1 Manipulating/Transforming
3 Inferring/Drawing Conclusions	2 Communicating

Math Big Ideas

☑ Scale	☐ Reference Frame	☐ Representation
☐ Continuity	☐ Boundedness	☐ Invariance/Symmetry
☐ Equivalence	☐ General/Particular	☐ Contradiction
☐ Use of Limits	☐ Approximation	☐ Other

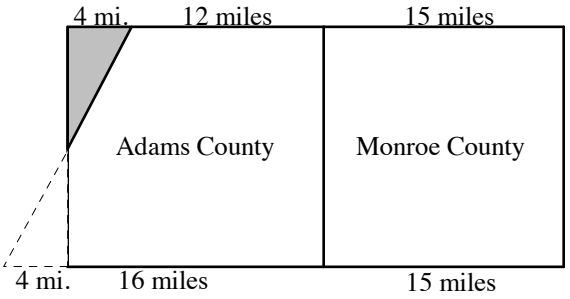
A. The rectangles have the same height, but Rectangle #1 has a longer base than Rectangle #2. Therefore, Rectangle #1 has the larger area.

B. The rectangle and the triangle have the same height. The base of the triangle is 8 units, which is double the base of Rectangle #2 from the previous problem. This means that the triangle has the same area as Rectangle #2. Therefore, Rectangle #1 has a larger area than the triangle.

1. Calculate the area of Jackson County by dividing it into two rectangles (14 miles by 12 miles and 4 miles by 3 miles, **or** 14 miles by 9 miles and 18 miles by 3 miles). The area is 180 square miles, which converts to 115,200 acres.

At a cost of $29 per acre, the spraying would cost $3,340,800. The farmers would be expected to gain four times this amount, which is $13,363,200.

2. Adams County has the same area as a rectangle with a base of 16 miles. One way to see this is to cut off a triangle and replace it as shown.



Other students may think of Adams County as a trapezoid, and determine its area to be $\frac{12+16}{2}$ h, or 16 h , compared to the area of the rectangle which is 15 h.

Therefore, Adams County has a larger area than Monroe County.

	partial level (1 or 2)	full level (3)
Modeling/ Formulating (weight: 2)	Student is able to formulate a strategy which leads to a correct result for either question **1a 1b,** or **1c.**.	Student formulates a strategy which gives a successful answer for all parts of question **1**.
Transforming/ Manipulating (weight: 1)	Some computations are correct.	All computations are correct.
Inferring/ Drawing Conclusions (weight: 3)	Student is partially successful in using the information gained from the pre-activity to answer question **2**.	Student answers question **2** correctly, based on assumptions guided by the pre-activity.
Communicating (weight: 2)	The explanation for question **2** is either not persuasive, or is unclear.	The explanation for question **2** is clear, persuasive, and utilizes all available mathematical justification.