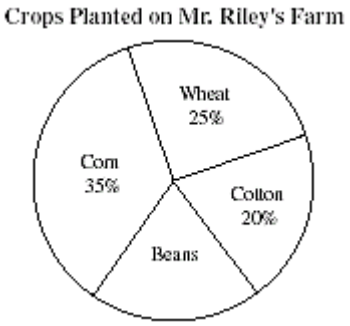
Number Sense and Operations

Mr. Riley grows four different crops on his 300-acre farm. Each acre has the same number of plants. The circle graph below shows what percent of the total number of acres is planted in each crop.



a. What percent of Mr. Riley's farm is planted in beans? Show or explain your work.

b. How many acres of wheat are planted in Mr. Riley's farm? Show or explain your work.

c. Mr. Riley thinks that if he plants wheat in all of the acres that are beans, more than half his farm would be wheat. Is he correct? Why or why not? Show or explain your work.

Scoring Guide

Score	Description
4	The student response demonstrates an exemplary understanding of the Number Sense and Operations concepts involved in accurately adding, subtracting, multiplying, and dividing whole numbers and positive decimals.
3	The student response demonstrates a good understanding of the Number Sense and Operations concepts involved in accurately adding, subtracting, multiplying, and dividing whole numbers and positive decimals. Although there is significant evidence that the student was able to recognize and apply the concepts involved, some aspect of the response is flawed. As a result the response merits 3 points.
2	The student response contains fair evidence of an understanding of the Number Sense and Operations concepts involved in accurately adding, subtracting, multiplying, and dividing whole numbers and positive decimals. While some aspects of the task are completed correctly, others are not. The mixed evidence provided by the student merits 2 points.
1	The student response contains only minimal evidence of an understanding of the Number Sense and Operations concepts involved in accurately adding, subtracting, multiplying, and dividing whole numbers and positive decimals.
0	The student response contains insufficient evidence of an understanding of the Number Sense and Operations concepts involved in accurately adding, subtracting, multiplying, and dividing whole numbers and positive decimals to merit any points.

Score Point 4

a.) 20% of Mr. Riley's farm is planted in beans because 25% + 35% + 20% = 80%
100% - 80% = 20% so 20% is left for beans.

b.) 75 acres of wheat are planted in Mr. Riley's farm because I divided 300 acres by 4 because 25% 1/4. When I divided, I got 75 so 75 acres are planted in wheat.

c.) No, Mr. Riley is not correct because 25% which is wheat + 20% which is beans = 45% and 50% is half. Wheat would be less than half by 5%.

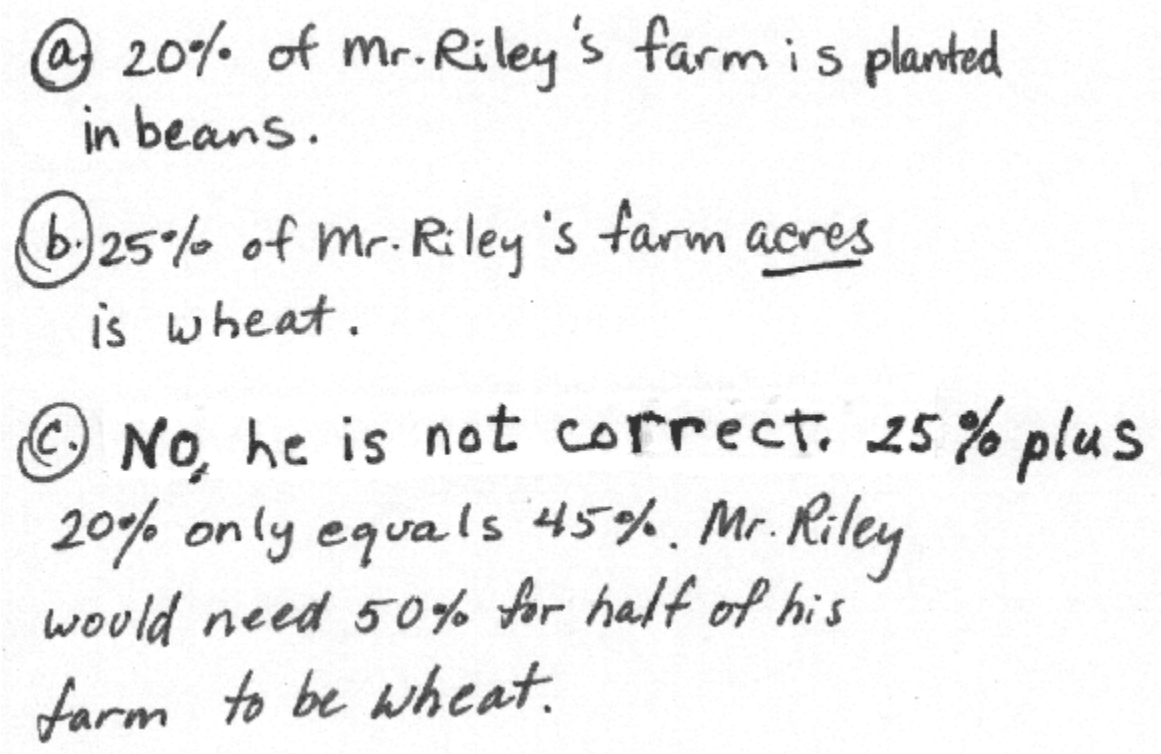
Score Point 3

A.) 20% of Mr. Riley's farm is bean. This is so because if you add all of the precents, it should add up to 100%. Beans is the only one missing, so if you add all the other precents up and subtract it from 100%, you will find the precent of the beans. In this case it is 20%

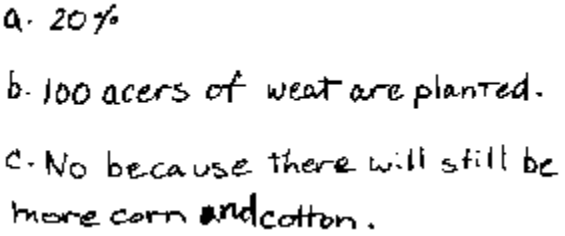
B.) 75 acres of land have wheat on them. This is so because 25% is another word for 1/4. 1/4 of 300 is 300/4. The answer to this is 75 acres.

C.) Mr. Riley is not correct. If he plants wheat on all of the acres of bean plants, he will only have 40% which is not quite half.

Score Point 2



Score Point 1



Score Point 0