

## Human Inheritance Task with Student Directions

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**Task:** In this task you will analyze genetic characteristics from a family tree.

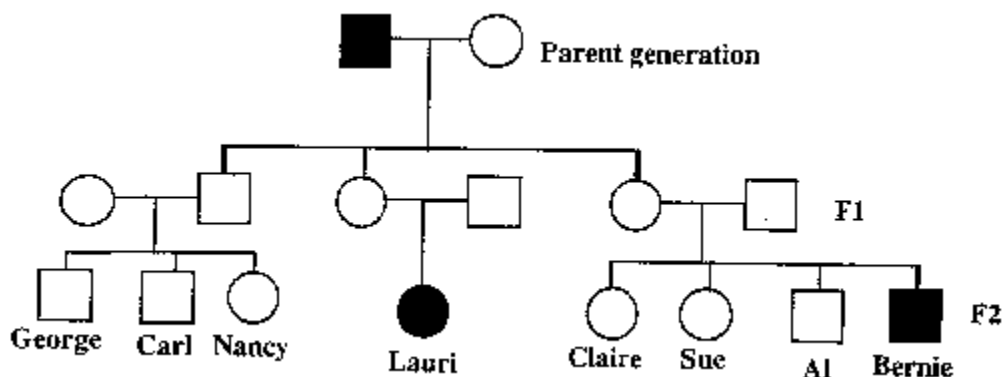
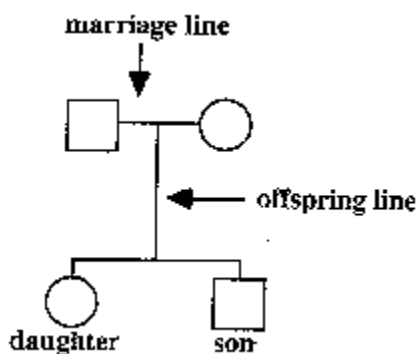
### Directions

#### Part I

Based your answers to the following questions on the pedigree chart below and on your knowledge of biology. The pedigree traces the expression of a particular trait, represented by the darkened symbol, through three (3) generations. These generations are labeled Parent Generation, F1, and F2 so that they correspond to the generations of pea plants that Gregor Mendel used to formulate his Laws of Heredity.

**KEY**

- = male
- = male with trait
- = female
- = female with trait




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### Answer sheet Part 1 - Human Inheritance

1. Is the trait represented by the darkened symbol dominant or recessive?

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2. Using complete sentences describe how Mendel would have explained your answer to question #1?

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3. Describe all the possible genotypes of Bernie, his mother, his father, and his brother, Al.

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4. Using complete sentences explain how you determined your answer to question #3.

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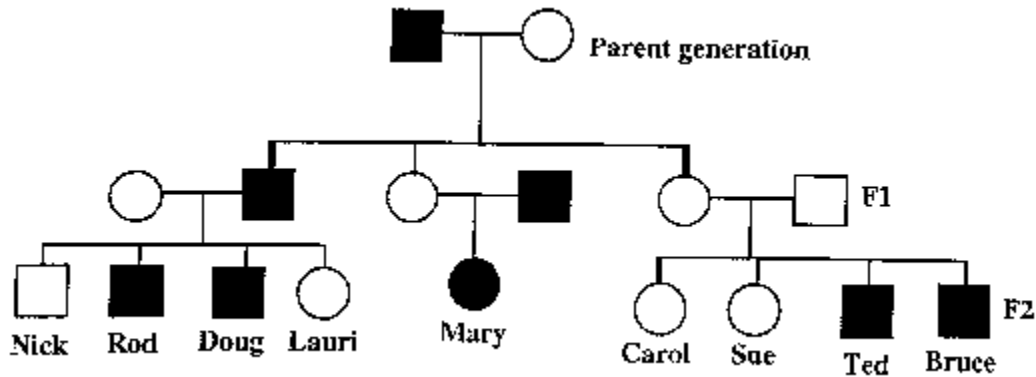
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## Part II

### Directions:

Base your answers to the following questions on the pedigree chart below and on your knowledge of biology. The pedigree traces the expression of a particular trait, represented by the darkened symbols, through three (3) generations. Studies have shown that individuals with this trait are frequently male. The trait rarely appears in females and only if the father also has the trait.



1. Is the gene for this trait dominant or recessive?

\_\_\_\_\_

2. Is the gene for this trait carried on the X or Y chromosome?

\_\_\_\_\_

3. Using complete sentences explain why the trait is more common in males than in females.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Using coded symbols give the genotypes of the following family members?  
Be sure to include your symbol for representing the genotypes you describe.

Symbols -

Bruce - \_\_\_\_\_

Bruce's Father - \_\_\_\_\_

Bruce's Mother - \_\_\_\_\_

Mary - \_\_\_\_\_

5. If Doug marries a woman whose lacking the trait, but whose father has the trait, what is the probability that they will have a son with the trait? What is the probability of their daughters having the trait?

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