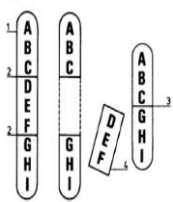
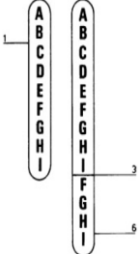
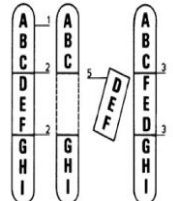
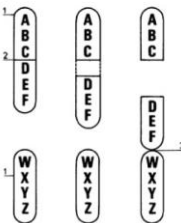


Chromosomal Mutations

The chart below contains the names of chromosomal mutations and a space to write in their description and draw what a chromosome with this mutation would look like. Your task is to use the descriptions on the chromosomal cards on pg 2 to match them with the mutated chromosome. Then, go back and fill in the descriptions for each and draw the mutated chromosome.

Normal chromosome:

| | | | | | |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|

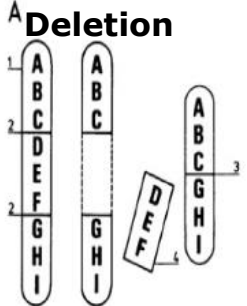
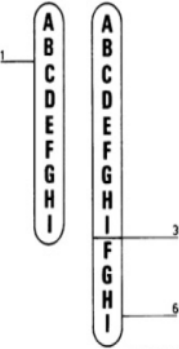
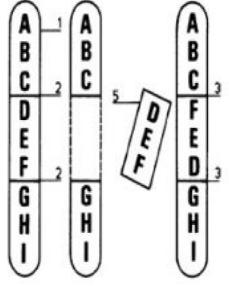
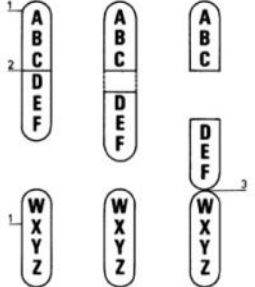
| Chromosomal Mutation | Description | Mutated Chromosome |
|--|-------------|--------------------|
| <p>A Deletion</p>  | | |
| <p>D Duplication</p>  | | |
| <p>B Inversion</p>  | | |
| <p>C Translocation</p>  | | |

A normal human karyotype (chromosome map) has 46 chromosomes in 23 pairs. If a person has a monosomy, how many total chromosomes will they have? _____ If a person has a trisomy, how many total chromosomes will the person have? _____

Define nondisjunction and explain how it happens:

Chromosomal Mutations Cards

****The middle and right-hand columns are all mixed up! Write the correct descriptions and mutated chromosome sketches in the correct locations on the first page.**

| | | | | | | | | | | | |
|--|--|---|----|----|---|---|---|---|----|----|----|
| <p style="text-align: center;"><u>Names</u></p> <p>A Deletion</p>  | <p><u>Description</u></p> <p>A portion of the chromosome has broken off, turned upside down, and reattached, therefore the genetic material is backward</p> | <p style="text-align: center;">Mutated Chromosome</p> <table border="1" style="margin: 0 auto; border-collapse: collapse;"> <tr> <td style="width: 25px; text-align: center;">1</td> <td style="width: 25px; text-align: center;">2</td> <td style="width: 25px; text-align: center;">3</td> <td style="width: 25px; text-align: center;">4</td> </tr> </table> <table border="1" style="margin: 0 auto; border-collapse: collapse;"> <tr> <td style="width: 25px; text-align: center;">5</td> <td style="width: 25px; text-align: center;">6</td> <td style="width: 25px; text-align: center; border: 1px solid black; border-radius: 50%;">18</td> <td style="width: 25px; text-align: center; border: 1px solid black; border-radius: 50%;">19</td> <td style="width: 25px; text-align: center; border: 1px solid black; border-radius: 50%;">20</td> </tr> </table> <p style="text-align: center;">(Draw this in your data table.)</p> | 1 | 2 | 3 | 4 | 5 | 6 | 18 | 19 | 20 |
| 1 | 2 | 3 | 4 | | | | | | | | |
| 5 | 6 | 18 | 19 | 20 | | | | | | | |
| <p>Duplication</p>  | <p>A portion of the chromosome is missing or deleted.</p> | <p style="text-align: center;">Mutated Chromosome</p> <table border="1" style="margin: 0 auto; border-collapse: collapse;"> <tr> <td style="width: 25px; text-align: center;">1</td> <td style="width: 25px; text-align: center;">2</td> <td style="width: 25px; text-align: center;">4</td> <td style="width: 25px; text-align: center;">3</td> <td style="width: 25px; text-align: center;">5</td> <td style="width: 25px; text-align: center;">6</td> </tr> </table> <p style="text-align: center;">(Draw this in your data table.)</p> | 1 | 2 | 4 | 3 | 5 | 6 | | | |
| 1 | 2 | 4 | 3 | 5 | 6 | | | | | | |
| <p>B Inversion</p>  | <p>When a portion of one chromosome is transported to another chromosome.</p> | <p style="text-align: center;">Mutated Chromosome</p> <table border="1" style="margin: 0 auto; border-collapse: collapse;"> <tr> <td style="width: 25px; text-align: center;">1</td> <td style="width: 25px; text-align: center;">2</td> <td style="width: 25px; text-align: center;">3</td> <td style="width: 25px; text-align: center;">4</td> <td style="width: 25px; text-align: center;">5</td> <td style="width: 25px; text-align: center;">6</td> <td style="width: 25px; text-align: center;">6</td> </tr> </table> <p style="text-align: center;">(Draw this in your data table.)</p> | 1 | 2 | 3 | 4 | 5 | 6 | 6 | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 6 | | | | | |
| <p>C Translocation</p>  | <p>A portion of a chromosome is duplicated, resulting in extra genetic material.</p> | <p style="text-align: center;">Mutated Chromosomes</p> <table border="1" style="margin: 0 auto; border-collapse: collapse;"> <tr> <td style="width: 25px; text-align: center;">1</td> <td style="width: 25px; text-align: center;">2</td> <td style="width: 25px; text-align: center;">4</td> <td style="width: 25px; text-align: center;">5</td> <td style="width: 25px; text-align: center;">6</td> </tr> </table> <p style="text-align: center;">(Draw this in your data table.)</p> | 1 | 2 | 4 | 5 | 6 | | | | |
| 1 | 2 | 4 | 5 | 6 | | | | | | | |