**Drosophila Data Analysis**

**DATA ANALYSIS**

1. In the space below, construct two Punnett squares for each cross to predict the expected results of both the parental and F1 crosses from your null hypothesis.

**Cross 1: P generation = sepia male \* wild type female**

|  |  |
| --- | --- |
| **Parental Cross** | **F1 Cross** |
|  |  |

**Cross 2: P generation = sepia-eye, normal-wing male \* wild type, vestigial wing female**

|  |  |
| --- | --- |
| **Parental Cross** | **F1 Cross** |
|  |  |

**Cross 3: P generation = wild type male \* white eye female**

|  |  |
| --- | --- |
| **Parental Cross** | **F1 Cross** |
|  |  |

1. Refer to the Punnett Squares above. In the boxes below, record the **expected** ratios for the genotypes and phenotypes of the F1 and F2 generations in the experiment.

**Cross 1: P generation = sepia male \* wild type female**

|  |  |  |
| --- | --- | --- |
|  | **Expected Genotype Ratio** | **Expected Phenotype Ratio** |
| F1 |  |  |
| F2 |  |  |

**Cross 2: P generation = sepia-eye, normal-wing male \* wild type, vestigial wing female**

|  |  |  |
| --- | --- | --- |
|  | **Expected Genotype Ratio** | **Expected Phenotype Ratio** |
| F1 |  |  |
| F2 |  |  |

**Cross 3: P generation = wild type male \* white eye female**

|  |  |  |
| --- | --- | --- |
|  | **Expected Genotype Ratio** | **Expected Phenotype Ratio** |
| F1 |  |  |
| F2 |  |  |

1. Do the observed results deviate from your expected results? If so, explain how:

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

**Cross 1: P generation = sepia male \* wild type female**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Phenotype** | **Observed** | **Expected** | **(o-e)** | **(o-e)2/e** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

χ2 = \_\_\_\_\_\_\_\_\_\_\_

How many degrees of freedom are there? \_\_\_\_\_\_\_\_\_

What is the critical value? \_\_\_\_\_\_\_\_\_

Do you accept or reject your Ho? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Cross 2: P generation = sepia-eye, normal-wing male \* wild type, vestigial wing female**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Phenotype** | **Observed** | **Expected** | **(o-e)** | **(o-e)2/e** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

χ2 = \_\_\_\_\_\_\_\_\_\_\_

How many degrees of freedom are there? \_\_\_\_\_\_\_\_\_

What is the critical value? \_\_\_\_\_\_\_\_\_

Do you accept or reject your Ho? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Cross 3: P generation = wild type male \* white eye female**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Phenotype** | **Observed** | **Expected** | **(o-e)** | **(o-e)2/e** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

χ2 = \_\_\_\_\_\_\_\_\_\_\_

How many degrees of freedom are there? \_\_\_\_\_\_\_\_\_

What is the critical value? \_\_\_\_\_\_\_\_\_

Do you accept or reject your Ho? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_