Name: _____ Date: _____ Period: _____

# INDEPENDENT PRACTICE: Punnett Squares

Define ***homozygous*** _____

Define ***heterozygous*** _____

Circle the following genotype(s) that are **homozygous**: **BB** **Bb** **bb**

Circle the following genotype(s) that are **heterozygous**: **BB** **Bb** **bb**

**Use the information above to answer the following questions and to complete the table below.**

| Allele | Trait | Type |
|---|---|---|
| G | Solid gray fur | Dominant |
| g | Striped gray fur | Recessive |
| B | Green eyes | Dominant |
| b | Blue Eyes | Recessive |
| T | Long tail | Dominant |
| t | Short tail | Recessive |
| E | Large ears | Dominant |
| e | Small ears | Recessive |

1. What is the genotype of an animal that is homozygous dominant for tail length? _____
What would this animal's phenotype be?

_____

2. What is the genotype of an animal that is homozygous recessive for ear size? _____
What would this animal's phenotype be?

_____

3. What is the genotype of an animal that is homozygous for large ears? _____
What would this animal's phenotype be? _____

4. What is the genotype of an animal that is heterozygous for tail length? _____
What would this animal's phenotype be? _____

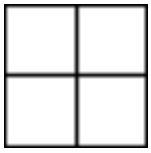
5. What is the genotype of an animal that is heterozygous for eye color? _____
What would this animal's phenotype be? _____

**Complete the table below for the rest of these genotype/phenotype combinations.**

| Description | Genotype | Phenotype |
|---|---|---|
| Heterozygous for fur | | |
| Homozygous recessive for fur | | |
| Homozygous dominant for eye color | | |
| Heterozygous for tail length | | |
| Homozygous dominant for ear size | | |
| Heterozygous for ear size | | |
| Homozygous dominant for fur | | |
| Homozygous recessive for tail length | | |
| Homozygous for blue eyes | | |

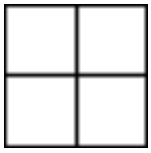
**Complete the following Punnett squares and answer the questions go with each pair.**
**Use the table of information below to answer questions 1-4.**

| Allele | Trait | Type |
|---|---|---|
| G | Green feathers | Dominant |
| g | Yellow feathers | Recessive |
| L | Long beak | Dominant |
| l | Short beak | Recessive |



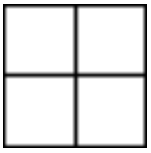
1. **Gg (♂) x Gg (♀)**
What is the ratio of green feathers to yellow feathers?

_____



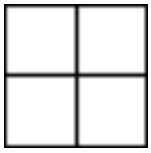
2. **GG (♂) x Gg (♀)**
What percentage of offspring will be homozygous recessive?

_____



3. **A male which has a short beak is crossed with a female that is heterozygous for beak length.** What percentage of offspring will have short beaks?

_____

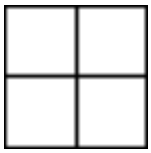


4. **Ll (♂) x Ll (♀)**
What percentage of offspring will have long beaks?

_____

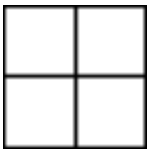
**Use this information for questions 5-9 on this page.**

| Allele | Trait |
|---|---|
| T | Tall |
| t | Short |
| S | Smooth peas |
| s | Wrinkled peas |
| P | Purple flowers |
| p | White flowers |



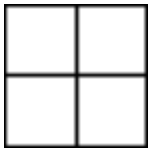
5. **Ss (♂) x ss (♀)**
What will be the ratio of smooth peas to wrinkled peas?

_____



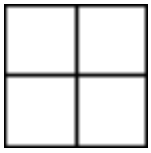
6. **pp (♂) x Pp (♀)**
What percentage of offspring will have white flowers?

_____



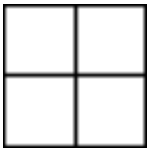
7. **A plant which is short is crossed with a plant that is homozygous dominant for height.** What percentage of plants will be short?

_____



8. **Two plants which are heterozygous for pea shape are crossed with each other.** What percentage of plants will have wrinkled peas?

_____



9. **A plant which is homozygous for purple flowers is crossed with a plant that has white flowers.** What percentage of offspring will have purple flowers?

_____