

Name: _____ Period: _____

5.4 Complex Patterns of Inheritance Practice #1

In Class Example: (with rabbit fur color)

Cross a Cc^{ch} wild-type rabbit with a $c^h c$ Himalayan rabbit.

What percentage of rabbits will be:

Wild-type _____

Chinchilla _____

Himalayan _____

Albino _____

Allele	Phenotypes
C	Wild type; the most dominant fur pattern
c^{ch}	Chinchilla; recessive only to wild type
c^h	Himalayan; dominant over albino only
c	Albino; recessive

1. Rabbit fur: Cross a $c^{ch} c^h$ chinchilla rabbit with a $c^h c$ Himalayan rabbit.

What percentage of rabbits will be:

Wild-type _____

Chinchilla _____

Himalayan _____

Albino _____

Chipmunks have three possible phenotypes for their body shapes due to their multiple alleles. Below are the genotypes for each phenotype. Answer the questions that follow on the back side of this page.



Rolly-Polly	Triangular	Boxy
B	b^t	b^b
Dominant over other alleles	Recessive only to Rolly-Polly	Recessive to both other alleles

2. Cross a homozygous Rolly-Polly squirrel with a $b^t b^b$ Triangular squirrel. What is the chance (in percent) that any of the possible phenotypes will result?

Genotypic Ratio:

Phenotypic Ratio:

3. Cross a Bb^b Rolly-Polly squirrel with a $b^t b^b$ Triangular squirrel. What is the chance (in percent) that any of the possible phenotypes will result?

Genotypic Ratio:

Phenotypic Ratio:

4. Cross a Bb^b Rolly-Polly squirrel with a $b^b b^b$ Boxy squirrel. What is the chance (in percent) that any of the possible phenotypes will result?

Genotypic Ratio:

Phenotypic Ratio:

5. Dihybrid cross: Squirrels also have a dominant/recessive trait for buckteeth. Big buckteeth (T) are dominant, and small buckteeth are recessive (t). Cross two squirrels with the following genotypes for body shape and buckteeth to create a dihybrid cross. Be sure to use the Law of Independent Assortment!

Parent Genotypes: $Bb^t Tt$ x $b^b b^b tt$

Possibility of Offspring Phenotypes in %:

Rolly-Polly/Big teeth _____

Rolly-Polly/Small teeth _____

Boxy/Big teeth _____

Boxy/Small teeth _____

Triangular/Big teeth _____

Triangular/Small teeth _____
