

Genetics Practice Problems

Name _____

Date _____

Period _____

1. For each genotype below, indicate whether it is:

Heterozygous (He)

Homozygous Dominant (HD)

Homozygous Recessive (HR)

AA _____

Ee _____

li _____

Mm _____

Bb _____

ff _____

Jj _____

nn _____

Cc _____

Gg _____

kk _____

oo _____

DD _____

HH _____

LL _____

Pp _____

2. For each of the genotypes (Pp) below determine what phenotypes (trait shown) would be possible.

<p>Purple flowers are dominant to white flowers.</p> <p>PP _____</p> <p>Pp _____</p> <p>pp _____</p> <p>Round seeds are dominant to wrinkled seeds.</p> <p>RR _____</p> <p>Rr _____</p> <p>rr _____</p>	<p>Brown eyes are dominant to blue eyes</p> <p>BB _____</p> <p>Bb _____</p> <p>bb _____</p> <p>Bobtails in cats are recessive. (Bobtail=short tail)</p> <p>TT _____</p> <p>Tt _____</p> <p>tt _____</p>
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3. For each phenotype below, list the possible genotypes (dominant trait determines the letter)

<p><i>Straight hair is dominant to curly hair. (Use S)</i></p> <p>_____ straight</p> <p>_____ straight</p> <p>_____ curly</p>	<p><i>Pointed heads are dominant to round heads.</i></p> <p>_____ pointed</p> <p>_____ pointed</p> <p>_____ round</p>
<p><i>Long Nose is dominant to short nose.</i></p> <p>_____ Long</p> <p>_____ Long</p> <p>_____ short</p>	<p><i>Round Eyes is dominant to oval shaped eyes.</i> <i>(Fill in the correct phenotypes)</i></p> <p>_____</p> <p>_____</p> <p>_____</p>

4. Set up the Punnett Squares for each of the crosses listed below.

Round seeds are dominant to wrinkled seeds.

MAKE A KEY → $R =$ _____ $r =$ _____

Rr x rr

How many of the offspring will be round? _____
How many of the offspring will be wrinkled? _____
How many of the offspring heterozygous? _____

RR x rr

How many of the offspring will be round? _____
How many of the offspring will be wrinkled? _____
How many of the offspring homozygous dominant? _____

RR x Rr

How many of the offspring will be round? _____
How many of the offspring will be wrinkled? _____
How many of the offspring purebred? _____

Rr x Rr

How many of the offspring will be round? _____
How many of the offspring will be wrinkled? _____
How many of the offspring homozygous recessive? _____

Four toes are dominant to three toes.

MAKE A KEY → $F =$ _____ $f =$ _____

FF x ff

How many of the offspring will have four toes? _____
How many of the offspring will have three toes? _____
How many of the offspring heterozygous? _____

Ff x ff

How many of the offspring will have four toes? _____
How many of the offspring will have three toes? _____
How many of the offspring homozygous recessive? _____

Ff x Ff

How many of the offspring will have four toes? _____
How many of the offspring will have three toes? _____
How many of the offspring Purebred? _____

ff x Ff

How many of the offspring will have four toes? _____
How many of the offspring will have three toes? _____
How many of the offspring hybrid? _____

Genetics Practice Problems 2

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A purebred tall plant is crossed with a purebred short plant.

Key: T = _____ t = _____

Genotype of the parents _____ x _____

Phenotype of the parents _____ x _____

Use only the lines you need here to complete the statistics

<p>List the genotypes of the offspring</p> <p>_____ = _____ out of _____</p> <p>_____ = _____ out of _____</p> <p>_____ = _____ out of _____</p> <p>_____ = _____ out of _____</p>	<p>List the phenotypes of the offspring</p> <p>_____ out of _____ will appear _____</p> <p>_____ out of _____ will appear _____</p> <p>_____ out of _____ will appear _____</p> <p>_____ out of _____ will appear _____</p>
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What percentage of the offspring will be tall? _____

6. A hybrid tall appearing plant is crossed with a homozygous recessive plant that is short.

Key: ____ = _____ ____ = _____

Genotype of the parents _____ x _____

Phenotype of the parents _____ x _____

Use only the lines you need here to complete the statistics

<p>List the genotypes of the offspring</p> <p>_____ = _____ out of _____</p> <p>_____ = _____ out of _____</p> <p>_____ = _____ out of _____</p> <p>_____ = _____ out of _____</p>	<p>List the phenotypes of the offspring</p> <p>_____ out of _____ will appear _____</p> <p>_____ out of _____ will appear _____</p> <p>_____ out of _____ will appear _____</p> <p>_____ out of _____ will appear _____</p>
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What is the possibility of having a short plant? _____

7. A hybrid black rabbit is crossed with a purebred white rabbit. (White is recessive)

Key: _____ = _____ _____ = _____

Genotype of the parents _____ x _____

Phenotype of the parents _____ x _____

Use only the lines you need here to complete the statistics

<p>List the genotypes of the offspring</p> <p>_____ = _____ out of _____</p> <p>_____ = _____ out of _____</p> <p>_____ = _____ out of _____</p> <p>_____ = _____ out of _____</p>	<p>List the phenotypes of the offspring</p> <p>_____ out of _____ will appear _____</p> <p>_____ out of _____ will appear _____</p> <p>_____ out of _____ will appear _____</p> <p>_____ out of _____ will appear _____</p>
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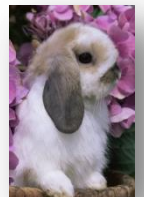
What percentage of the offspring will be white rabbits? _____

8. A heterozygous tall eared rabbit is crossed with a heterozygous tall eared rabbit. (Lop eared is recessive)

Key: _____ = _____ _____ = _____

Genotype of the parents _____ x _____

Phenotype of the parents _____ x _____



Use only the lines you need here to complete the statistics

<p>List the genotypes of the offspring</p> <p>_____ = _____ out of _____</p> <p>_____ = _____ out of _____</p> <p>_____ = _____ out of _____</p> <p>_____ = _____ out of _____</p>	<p>List the phenotypes of the offspring</p> <p>_____ out of _____ will appear _____</p> <p>_____ out of _____ will appear _____</p> <p>_____ out of _____ will appear _____</p> <p>_____ out of _____ will appear _____</p>
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What is the possibility of having a Lop eared bunny? _____