

Genetics Practice Problems - Simple Worksheet

1. For each genotype below, indicate whether it is heterozygous (**He**) or homozygous (**Ho**)

AA _____ Ee _____ Ii _____ Mm _____

Bb _____ ff _____ Jj _____ nn _____

Cc _____ Gg _____ kk _____ oo _____

DD _____ HH _____ LL _____ Pp _____

2. For each of the **genotypes** below determine what **phenotypes** would be possible.

Purple flowers are dominant to white flowers.

PP _____

Pp _____

pp _____

Round seeds are dominant to wrinkled seeds.

RR _____

Rr _____

rr _____

Brown eyes are dominant to blue eyes

BB _____

Bb _____

bb _____

Bobtails in cats are recessive.

TT _____

Tt _____

tt _____

3. For each **phenotype** below, list the **genotypes** (remember to use the letter of the dominant trait)

Straight hair is dominant to curly.

_____ straight

_____ straight

_____ curly

Pointed heads are dominant to round heads.

_____ pointed

_____ pointed

_____ round

4. Set up the Punnet squares for each of the crosses listed below. *Round seeds are dominant to wrinkled seeds.*

Rr x rr

What percentage of the offspring will be round?

RR x rr

What percentage of the offspring will be round?

RR x Rr

What percentage of the offspring will be round?

Rr x Rr

What percentage of the offspring will be round?

Practice with Crosses. Show all work!

SHOW

5. A TT (tall) plant is crossed with a tt (short plant).

What percentage of the offspring will be tall?

6. A Tt plant is crossed with a Tt plant.

What percentage of the offspring will be short?

7. A heterozygous round seeded plant (Rr) is crossed with a homozygous round seeded plant (RR).

What percentage of the offspring will be homozygous (RR)? _____

8. A homozygous round seeded plant is crossed with a homozygous wrinkled seeded plant.

What are the genotypes of the parents?

_____ x _____

What percentage of the offspring will also be homozygous? _____

9. In pea plants purple flowers are dominant to white flowers.

If two white flowered plants are cross, what percentage of their offspring will be white flowered?

10. A white flowered plant is crossed with a plant

Genetics Practice Problems - Simple Worksheet

1. For each genotype below, indicate whether it is heterozygous (**He**) or homozygous (**Ho**)

AA <u>Ho (dom)</u>	Ee <u>He</u>	Ii <u>He</u>	Mm <u>He</u>
Bb <u>He</u>	ff <u>Ho (rec)</u>	Jj <u>He</u>	nn <u>Ho (rec)</u>
Cc <u>He</u>	Gg <u>He</u>	kk <u>Ho (rec)</u>	oo <u>Ho (rec)</u>
DD <u>Ho (dom)</u>	HH <u>Ho (dom)</u>	LL <u>Ho (dom)</u>	Pp <u>He</u>

2. For each of the **genotypes** below determine what **phenotypes** would be possible.

Purple flowers are dominant to white flowers.

PP Purple
Pp Purple
pp White

Round seeds are dominant to wrinkled seeds.

RR Round
Rr Round
rr Wrinkled

Brown eyes are dominant to blue eyes

BB Brown
Bb Brown
bb Blue

Bobtails in cats are recessive.

TT No Bobtail
Tt No Bobtail
tt Bobtail

3. For each **phenotype** below, list the **genotypes** (remember to use the letter of the dominant trait)

Straight hair is dominant to curly.

SS straight
Ss straight
ss curly

Pointed heads are dominant to round heads.

PP pointed
Pp pointed
pp round

4. Set up the Punnet squares for each of the crosses listed below. Round seeds are dominant to wrinkled seeds.

Rr x rr

	R	r
r	Rr	rr
r	Rr	rr

What percentage of the offspring will be round?

50%

RR x rr	R	R
	r	Rr Rr
	r	Rr Rr

What percentage of the offspring will be round?

_____ 100%

RR x Rr	R	R
	R	RR RR
	r	Rr Rr

What percentage of the offspring will be round?

_____ 100%

Rr x Rr	R	r
	R	RR Rr
	r	Rr rr

What percentage of the offspring will be round?

_____ 75%

Practice with Crosses. Show all work!

5. A TT (tall) plant is crossed with a tt (short plant).

What percentage of the offspring will be tall?

_____ 100%

	T	T
t	Tt	Tt
t	Tt	Tt

6. A Tt plant is crossed with a Tt plant.

What percentage of the offspring will be short?

_____ 25%

	T	t
T	TT	Tt
t	Tt	tt

7. A heterozygous round seeded plant (Rr) is crossed with a homozygous round seeded plant (RR).

What percentage of the offspring will be homozygous (RR)?

_____ 50%

	R	r
R	RR	Rr
R	RR	Rr

8. A homozygous round seeded plant is crossed with a homozygous wrinkled seeded plant.

What are the genotypes of the parents?

RR x rr

	R	R
r	Rr	Rr
r	Rr	Rr

What percentage of the offspring will also be homozygous?

_____ 0%

9. In pea plants purple flowers are dominant to white flowers.

If two white flowered plants are cross, what percentage of their offspring will be white flowered?

_____ 100%

	r	r
r	rr	rr
r	rr	rr

10. A white flowered plant is crossed with a plant