Name: Answer Key

eyes

Genetics Practice Problems - Worksheet

rr winkles

1.	For ea	ich g	genotype	below,	indicate	whether i	t is	heterozygous	(He)	or
ho	mozygo	ous	(Ho)					C.V.		

AA Ho	Ee He	II He	Mm He
Bb He	ff Ho	Jj He	nn Ho
Cc He	Gg He	kk Ho	00 Hb
DD Ho	HH HO	u Ho	Pp He

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

Purple flowers are dominant to white	Brown eyes are dominant to blue		
flowers.	BB Brown		
PP Purple	Bb Brown		
Pp_Purple	bb blue.		
pp white			
	Bobtails in cats are recessive.		
Round seeds are dominant to wrinkled seeds.	TT Long tail		
RR Round	Tt Long tail		
Rr Round	++ Bobtall		

_	
Vame:	
4641165.	

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

Straight hair is dominant to curly.

Pointed heads are dominant to round heads.

<u>SS</u> straight

11 pointed

<u>65</u> straight

<u>Pp</u> pointed

<u>ട</u> curly

PP round

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

		£
D		RI
Rr x	_/ [10
rr	1	KI

What percentage of the offspring will be round? _50%/____

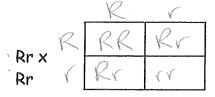
		1-15	1
RR x	~	Rr	Rr
KK X		00	0.
rr		IC Y	1-1

06

0

What percentage of the offspring will be round? $\frac{100\%}{6}$

		(<	Y<
RR x	R	RR	RR
Rr X		Rc	Rr



What percentage of the offspring will be round? ______

Practice with Crosses. SHOW YOUR PUNNETT SQUARE!

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

-	T+	"management to the same of the
	14	

Name:
What percentage of the offspring will be tall?
6. A heterozygous tall plant (Tt) is crossed with another heterozygous tall plant (Tt).
What percentage of the offspring will be short? 25%
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 RR R R 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.
9. In pea plants purple flowers are dominant to white flowers. If two white flowered plants are crossed, what percentage of their offspring will be white flowered?

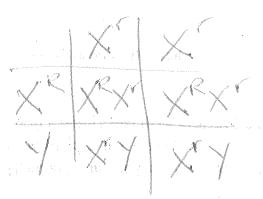
10. A white flowered plant is crossed with a plant that is heterozygous for the trait.

Name:
What percentage of the offspring will have purple flowers?
11. Two plants, both heterozygous for the gene that controls flower color are crossed.
What percentage of their offspring will have purple flowers?
What percentage will have white flowers? 25% RRRRR RR RY 12. In guinea pigs, the allele for short hair is dominant.
What genotype would a heterozygous short haired guinea pig have?
What genotype would a pure breeding short haired guinea pig have?
What genotype would a long haired guinea pig have?
13. Show the cross for a pure breeding short haired guinea pig and a long haired guinea pig. 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
What percentage of the offspring will have short hair?
14. Show the cross for two heterozygous guinea pigs. Solvey Solvey What percentage of the offspring will have short hair?

	Nai	me:	articasi erzezeko aktoako aktoa
What percentage of the offspring	will have long h	air?	
15. Two short haired guinea pigs ar offspring, 25 of them have long hat the parents?			
Ss × Ss	Show the cr	ross to prove itl	Committee of the commit
16. A cross between a purebred variety with white flower (Rr). Using a Punnett square, show offspring.	s (rr) results in the genotypes	n a plant with pink	flowers
If 120 flowers are produced from a many will have the genotype:	crossing the hyb		
RR <u>30</u> Rr <u>60</u>	rr <u>30</u>	· RK	RIV RRIBY RV CV
Av.	A AA A	n a father with ge	
What percentage of the offspring w		Type A?/	
What percentage of the offspring v	will have blood	Type B? <u>25%</u>	<u> </u>
18. In a cross between a white-eyed what percent of the female offsprint X-linked, recessive) Show your Punn	ng will have whi		
X X X X X X X X X X X X X X X X X X X		No fem offsprin white	

Vame	ì
vame.	
4 -44 1 -40	production of the state of the

19. A white-eyed female fruit fly is crossed with a red-eyed male. Red eyes are dominant, and X-linked. What are the expected phenotypes of the offspring?



= 50% Female with Red eyes - 50% male with white eyes