1. Black G. Pig that is hybrid “Fred”.

Practice Problems we did in class together on student white boards.

If you were absent, try to work through the problems using Punnett squares. You can check your answers on page two.

Marries white G. Pig is purebred. “Wilma”

Black is dominant

They have 100 babies. What color is the fur?

2. Mate 2 hybrid black elephants.

 Black is dominant.

 Gray is recessive.

 100 babies. What percent is black?

3. Dominant homozygous black mouse marries a recessive gray mouse.

 Babies genotypes?

 Babies phenotypes?

4. Mate a red hybrid (heterozygous) parrot with a pink one.

 Red is dominant.

 What are the phenotypes?

5. PKU is a genetically transmitted condition that can ultimately lead to brain damage. Persons who are heterozygous are healthy even though they carry the PKU allele. Persons who are homozygous recessive have the disease.

Cross a heterozygous carrier with a person who has PKU.

What is the percentage of children will have PKU?

6. Green Al’s dad was brown.

 His mom was green.

 Both are homozygous.

 Green is dominant.

 What are the genotypes of the parents?

7. Sam is a green heterozygous frog.

 Green is dominant.

 What is Sam’s genotype?

8. Sam marries a yellow Glenda.

 She is homozygous.

 Green is dominant.

 What is her genotype?

9. Sam and Glenda have 2,000 tadpoles.

 What are their phenotypes?

 Remember Sam is Gg and Glenda is gg

10. What are the phenotypes if you cross pea plants Tt and Tt?

11. If you cross two guinea pigs with the genotypes Bb, how many possible genotypes can be found in the offspring?

12. If you cross a white flower recessive with a purple flower that is homozygous dominant, what are the possible genotypes of the offspring?

13. If there are four black offspring, each having the genotype Bb, what are the parents’ genotype?

1. Black G. Pig that is hybrid “Fred”.

ANSWERS

Marries white G. Pig is purebred. “Wilma”

Black is dominant Bb X bb = bB, bB, bb, bb

They have 100 babies. What color is the fur? 50 black, 50 white

2. Mate 2 hybrid black elephants.

 Black is dominant.

 Gray is recessive. Bb X Bb = BB, bB, Bb, bb

 100 babies. What percent is black? 75% black, 25% white

3. Dominant homozygous black mouse marries a recessive gray mouse.

 Babies genotypes? Bb

 Babies phenotypes? all black

4. Mate a red hybrid (heterozygous) parrot with a pink one. Rr X rr = rR, rR, rr, rr

 Red is dominant. 50% red and 50% pink

 What are the phenotypes?

5. PKU is a genetically transmitted condition that can ultimately lead to brain damage. Persons who are heterozygous are healthy even though they carry the PKU allele. Persons who are homozygous recessive have the disease. Kk X kk = kK, kK, kk, kk

Cross a heterozygous carrier with a person who has PKU. 50%

What is the percentage of children will have PKU?

6. Green Al’s dad was brown.

 His mom was green.

 Both are homozygous.

 Green is dominant.

 What are the genotypes of the parents? GG and gg

7. Sam is a green heterozygous frog. Gg

 Green is dominant.

 What is Sam’s genotype?

8. Sam marries a yellow Glenda.

 She is homozygous. gg

 Green is dominant.

 What is her genotype?

9. Sam and Glenda have 2,000 tadpoles.

 What are their phenotypes? Gg X gg = gG, gG, gg, gg

 Remember Sam is Gg and Glenda is gg 1000 are green, 1000 yellow

10. What are the phenotypes if you cross pea plants Tt and Tt? all tall

11. If you cross two guinea pigs with the genotypes Bb, how many possible genotypes can be found in the offspring? Bb X Bb = BB, Bb, Bb, and bb

12. If you cross a white flower recessive with a purple flower that is homozygous dominant, what are the possible genotypes of the offspring? pp X PP = all Pp

13. If there are four black offspring, each having the genotype Bb, what are the parents’ genotype?

 BB X bb