Name _____ Date _____ Class _____

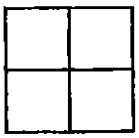
EXPECTED AND OBSERVED RESULTS

7. In corn plants, normal height H is dominant to short height h. Complete these four Punnett squares showing different crosses. Then, shade red all the pure dominant offspring. Shade green all the heterozygous offspring. Leave all the pure recessive offspring unshaded.

8. In flies, long wings L are dominant to short wings l. Complete these four Punnett squares showing different crosses. Then, shade red all the offspring that will have long wings. Leave all the shortwinged offspring unshaded.

9. In guinea pigs, short hair S is dominant to long hair s. Complete the following Punnett squares according to the directions given. Then, fill in the blanks beside each Punnett square with the correct numbers.

a. One guinea pig is Ss and one is ss.

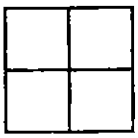


Offspring expected (number)

____ Short hair

____ Long hair

b. Both guinea pigs are heterozygous for short hair.



Offspring expected (number)

____ Short hair

____ Long hair

Name _____ Date _____ Class _____

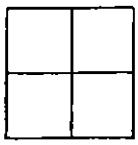
Use after Section 26:2.

GENETICS PROBLEMS IN AGRICULTURE

Fill in the Punnett squares to solve each of the following problems and answer the questions.

1. Imagine that you raise guinea pigs to sell and that brown guinea pigs are your best sellers. In guinea pigs, black coat color, ***B***, is dominant to brown coat color, ***b***. Show the expected offspring from the mating of the following parents. From which pair could you raise the greatest number of brown guinea pigs? _____

(a) Black male ***Bb*** × brown female ***bb***

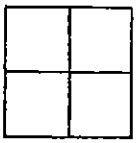


Offspring will be: (%)

Genotype _____

Phenotype _____

(b) Black male ***Bb*** × black female ***BB***

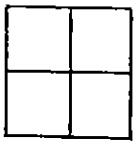


Offspring will be: (%)

Genotype _____

Phenotype _____

(c) Brown male ***bb*** × black female ***BB***



Offspring will be: (%)

Genotype _____

Phenotype _____

2. In tomatoes, red fruit color, ***R***, is dominant to yellow fruit color, ***r***. A farmer has tomatoes that produce either red or yellow tomatoes. He has signed a contract with a large seed company to provide pure red, ***RR***, and pure yellow, ***rr***, seeds. The seed company does not want any heterozygous, ***Rr***, seeds. How could the farmer tell if his red tomatoes are pure or heterozygous?

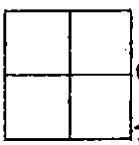
_____

_____

_____

_____

(a)

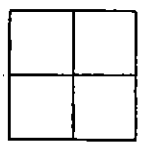


Offspring will be: (%)

Genotype _____

Phenotype _____

(b)



Offspring will be: (%)

Genotype _____

Phenotype _____