**More Punnett Square Problems** Use a Punnett square and your notes to answer the following questions for review

1. One breed of cattle can be red, white, or roan. The cross between 2 roans produces equal number of red and white progeny and twice as many roans., If a farmer wanted to breed an all roan herd, what animals should be the parents?

a. roan x roan

b. red x red

c. white x white

d. red x white

e. roan x red

7. Some people are able to roll their tongues into a U shape. The ability to do this is inherited as an autosomal dominant allele. What is the probability that children descendent from parents both heterozygous for this trait will be able to form a U shape with their tongues?

a. O

b. 25%

c. 50%

d. 75%

8. How many different allele combinations would be found in the gametes produced by a pea plant whose genotype was RrYY?

a. 2

b. 4

c. 8

d. 16

9. If a pea plant that is heterozygous for round, yellow peas (RrYy) is crossed with a pea plant that is homozygous for round peas but heterozygous for yellow peas (RRYy), how many different genotypes are their offspring expected to show?

a. 2

b. 4

c. 8

d. 16

13. How many recessive alleles for a trait must an organism inherit in order to show that trait?

14. In dogs, short hair is dominant over long hair. If two heterozygous short-haired dogs are crossed, what percent of the offspring will have long hair?

15. In dogs, short hair is dominant over long hair. If a dog homozygous for short hair is crossed with a long hair dog, what percent of the offspring will have short hair?

16. Black color in horses is dominant over chestnut color. If a pure black horse is mated to a chestnut horse, what is the probability that the offspring will be chestnut colored?

17. A common recessive trait in dogs is deafness. A pure line of normal hearing dogs was crossed with a pure line of deaf dogs. F1 and F2 generations were produced. What % of the F1 generation is expected to have normal hearing?

19. In a certain animal, black fur (B) is dominant over brown fur (b). If an animal heterozygous for black fur is crossed with an animal with brown fur,

what % of the offspring will have brown fur?

20. In a species of chickens, incomplete dominance between alleles for black (B) and white(w) feathers is observed. Heterozygotes are blue. If two blue

chickens are crossed, what is the probability that the offspring will be blue.

21. Freckles are dominant to no freckles. If Jack, who does not have freckles, marries Nicole who does, what % of their children will be recessive?

26. In fruit flies, the gene for curved wings (c) and the gene for spineless

bristles (s) are on different chromosomes. (Normal wings = C and normal

bristles = S)

Question – From the cross CCSS x ccss, what is the probability of having an

offspring that is CcSs?

a. O

b. 1/16

c. 3/16

d. 9/16

e. 1

28. In guinea pigs, black is dominant. One half of a particular litter is white. The probable parent cross was:

a. BB x Bb

b. Bb x Bb

c. Bb x bb

d. bb x bb

e. BB x bb

29. To determine whether an unknown black guinea pig is pure or hybrid black, it should be crossed with

a. a white

b. a hybrid black

c. a hybrid white

d. a pure black

e. another unknown

30. Organisms that have two identical alleles for a particular trait are said to be

a. hybrid

b. homozygous

c. heterozygous

d. dominant

31. A pea plant heterozygous for height and seed color (TtYy) is crossed with a pea plant heterozygous for height but homozygous recessive for seed color (Ttyy). If 80 offspring are produced, how many are expected to be tall and have yellow seeds?

32. Heterozygous male guinea pigs with black, rough hair (BbRr) are crossed with heterozygous female guinea pigs with black, rough hair (BbRr). The incomplete Punnett square below shows the expected results form the cross.

 BR Br bR br

BR BBRR BBRr BbRR BbRr

Br BBRr BBrr BbRr Bbrr

bR BbRR BbRr X bbRr

br BbRr Bbrr bbRr bbrr

Hair color

B- black

b-white

Hair Texture:

R-rough

r-smooth

What is the genotype of the offspring that would be represented in the square labeled X?

34. Identify the phenotype of the offspring represented in the square labeled X?

35. What is one of the possible genotypes for offspring with black, rough hair?