

Biology - Csolak  
Genetics Crosses Quiz

Name Answer Sheet

1. In dogs, **wire hair is dominant to smooth hair**. Show a cross between two dogs where one dog is **heterozygous** and the other dog is **homozygous recessive**. Give the **phenotypic and genotypic ratios** for their offspring.

$Ww \times ww$  parents  
 $(W) (w) \quad (w) (w)$  gametes

	w	w
W	Ww	Ww
w	ww	ww

geno. ratio 1 Ww : 1 ww  
 pheno. ratio 1 wire hair : 1 smooth hair

2. Feather color in a particular species of bird shows **incomplete dominance**. If a bird who is pure for blue feathers (BB) is crossed with a bird who is pure for red feathers (RR), all of their offspring show purple feathers. Show a cross between a bird with red feathers and a bird with purple feathers. What percent of their offspring will have blue feathers, red feathers, and purple feathers?

parents  $RR \times BR$   
 gametes  $(R) (B) (R)$

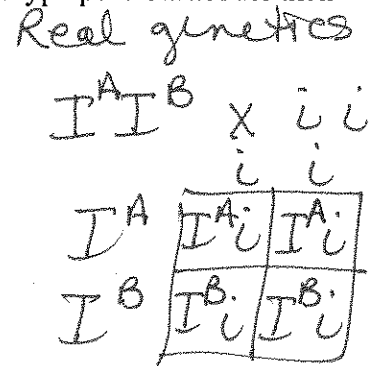
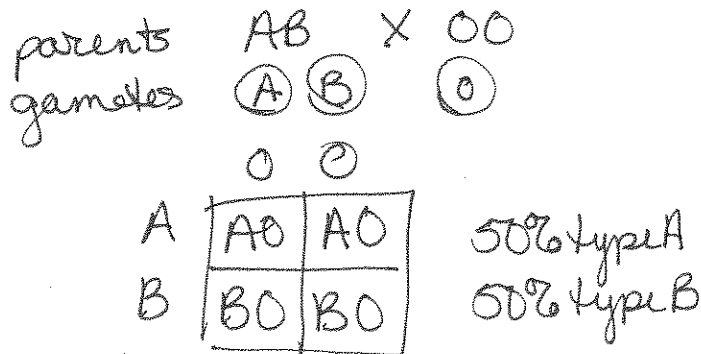
	B	R
R	BR	RR
R	BR	RR

0% blue feathers  
 50% red feathers  
 50% purple feathers

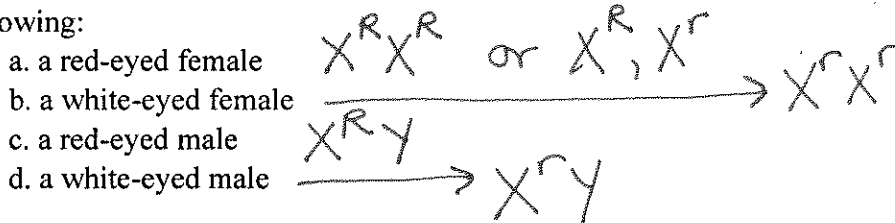
**Extra Credit.** If the above cross showed co-dominance instead of incomplete dominance, what would happen when a blue-feathered bird is crossed with a red-feathered bird?

$BB \times RR$   
 all offspring BR  
 they would have red feathers + blue feathers.

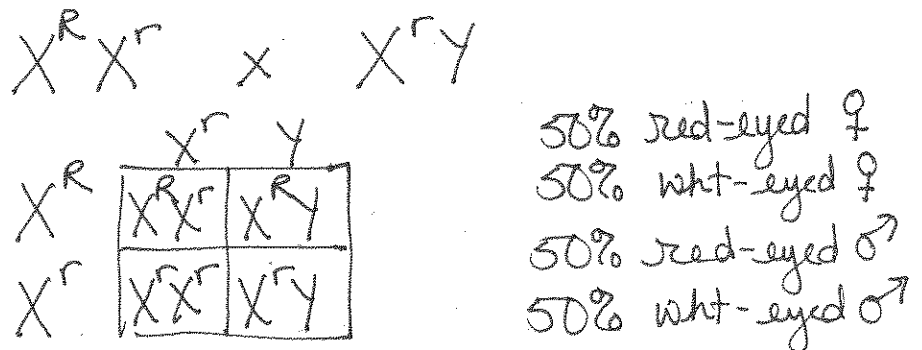
3. Human blood phenotypes include A, B, AB, and O. Show a **cross between a woman who has type AB** and her **husband who has type O**. What are the blood type possibilities for their children?



4. In fruit flies, eye color is a **sex-linked trait**. Red eye color is dominant to white eye color. Assume the flies have the same sex chromosomes as humans. Give the **genotypes** of the following:



- e. show a cross between a heterozygous red-eyed female and a white-eyed male and give the possibilities for their offspring



5. In plants, **tall is dominant to short** and **yellow seeds are dominant to green**. Show a cross between the following parents. For this cross, first tell me **what the phenotype of each parent** is. Then show the **different gametes** that each parent can be produce. Finally, give the **genotypic and phenotypic ratios** of their offspring.

