

Name: _____

Date: _____

Sex-Linked Traits

Sex-linked: Traits that are shown only on the sex chromosomes.

X = female chromosome Y = male chromosome

*sex-linked genes are carried only on the X chromosome.

**the 2 sex-linked traits in humans are hemophilia and color-blindness.

Hemophilia:

"bleeding disease". In hemophilia, a protein necessary for blood clotting is missing. People with hemophilia can bleed to death from a minor cut, and can suffer internal bleeding from small bruises. This is a recessive gene.

Color-blindness:

Inability to see or distinguish certain colors. This is a recessive gene.

*What is a **carrier**?

A carrier is an organism who has the allele for a certain trait, but does NOT show the trait.

Example:

Cross a red-eyed female fruit fly (R) with a white-eyed male (W).

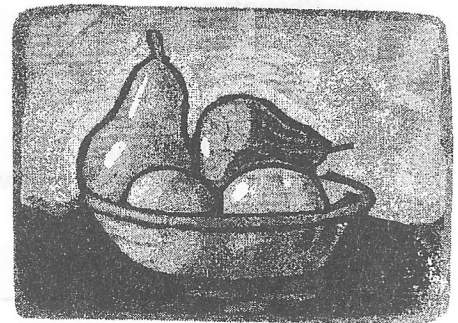
P = $X^R X^r \times X^r Y$

100% Red-eyed

50% males

50% females

	X^R	X^R
X^r		
Y		



Practice Problem:

Cross a mother who carries the colorblind gene but doesn't show it ($X^R X^r$), and a normal father ($X^R Y$).

P = _____ x _____

Genotypes:

Phenotypes:

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Practice Problem 2:

Cross a mother with hemophilia (h) with a normal father.

P= _____ x _____

Genotypes:

Phenotypes:



Practice problem 3:

Cross a colorblind mother(r) with a normal father.

P= _____ x _____

Genotypes:

Phenotypes:

Practice Problem 4:

Cross a mother who **carries** the hemophilia gene but does not express it, with a father with hemophilia.

P= _____ x _____

Genotypes:

Phenotypes:
