

1. For each problem, carry out the following steps:
 - a. Make a Punnett square for the cross described
 - b. Write the genotype and phenotype ratios

In fruit flies, eye color is controlled by genes. Red is dominant to white.

i. $Rr \times rr$

	R	r
r	Rr	rr
r	Rr	rr

genotype ratio: 0:2:2
phenotype ratio: 2:2

ii. $rr \times RR$

	r	r
R	Rr	Rr
R	Rr	Rr

geno: 0:4:0
pheno: 4:0

iii. $Rr \times Rr$

	R	r
R	RR	Rr
r	Rr	rr

geno: 1:2:1
pheno: 3:1

2. In fruit flies, normal wings (W) is dominant to vestigial wings (w). The results of a cross of two flies gives the following offspring:

Normal wing	793
Vestigial wing	811

~ 50/50

ratio
pheno = 1:1

What was the genotype of the parents of these F1 offspring? Use a Punnett square to support your answer.

	W	w
w	Ww	ww
w	Ww	ww

so, parents were
ww and Ww

3. Circle the crosses that are possible (i.e., are written correctly) from the list below, and then complete them below using Punnett squares. Give the genotype and phenotype ratios for each.

a. $Ww \times RR$

b. $WW \times Ww$

c. $RW \times rw$

d. $Rr \times RR$

e. $Ww \times Ww$

f. $WR \times rr$

g. $Wwr \times Rrw$

b.

	W	w
W	WW	Ww
w	Ww	ww

genotype: 2:2:0
phenotype: 4:0

d.

	R	r
R	RR	Rr
R	RR	Rr

genotype: 2:2:0
phenotype: 4:0

	W	w
W	WW	Ww
w	Ww	ww

genotype: 1:2:1
phenotype: 3:1