

Genetic Crosses Worksheet

Name: _____

Use the critical values table here to do the problems below. *

Degrees of Freedom (df)					
Probability (p)	1	2	3	4	5
0.05	3.84	5.99	7.82	9.49	11.1
0.01	6.64	9.21	11.3	13.2	15.1
0.001	10.8	13.8	16.3	18.5	20.5

A $\rightarrow$ Attitide ; a $\rightarrow$ Shy

$B \rightarrow$ Big Feet ; $b \rightarrow$ small feet

$C \rightarrow \text{Cute}$; $c \rightarrow \text{Ugly}$

D $\rightarrow$ Dumb ;

E → empathetic ;

$F \rightarrow \text{Flatulent};$

$d \rightarrow \text{smart}$

e → mean

f $\rightarrow$ bloated

First Experiment P: Empathetic ♂ X Empathetic ♀

F1:

Empathetic	Mean
500 ♀ & 252 ♂	248 ♂

Tell me everything you can about the above cross:

Now use correct genetic symbols to rewrite above, the P cross.

Second Experiment P: dihybrid Attitude/Bigfoot ♂ X Shy / small footed ♀

F1:

Attitude / Big Feet	Attitude / small feet	shy / Big Feet	shy / small feet
245♂ & 256 ♀	254♂ & 247 ♀	255♂ & 248 ♀	249♂ & 251 ♀

Tell me everything you can about the above cross:

Now use correct genetic symbols to rewrite above, the P cross.

Third Experiment P: dihybrid Cute/Dumb ♂ X ugly/smart ♀

F1:

Cute/Dumb	Cute/smart	ugly/Dumb	ugly/smart
458♂ & 461♀	38♂ & 43♀	42♂ & 37♀	462♂ & 459♀

Tell me everything you can about the above cross:

Now use correct genetic symbols to rewrite above, the P cross.

Fourth Experiment P: dihybrid Cute/Dumb ♂ X ugly/smart ♀

F1:

Cute/Dumb	Cute/smart	ugly/Dumb	ugly/smart
38♂ & 43♀	458♂ & 461♀	462♂ & 459♀	42♂ & 37♀

Tell me everything you can about the above cross:

Now use correct genetic symbols to rewrite above, the P cross.

A $\rightarrow$ Attitude ; a $\rightarrow$ Shy

$B \rightarrow$ Big Feet ; $b \rightarrow$ small feet

$C \rightarrow \text{Cute}$; $c \rightarrow \text{ugly}$

D → Dumb ;

E → Empathetic ;

$F \rightarrow \text{Flatuent};$

$d \rightarrow \text{smart}$

e → mean

f $\rightarrow$ bloated

Fifth Experiment P: Empathetic / Flatuent ♂ X Empathetic / Flatuent ♀

F1:

Empathetic Flatuent ♀	Empathetic Flatuent ♂	mean bloated ♂	Empathetic bloated ♂	mean Flatuent ♂
498	237	225	19	21

Tell me everything you can about the above cross:

Now use correct genetic symbols to rewrite above, the P cross.

Sixth Experiment P: Empathetic / Flatuent ♂ X Empathetic / Flatuent ♀

F1:

Empathetic Flatuent ♀	Empathetic Flatuent ♂	mean bloated ♂	Empathetic bloated ♂	mean Flatuent ♂
498	22	18	238	223

Tell me everything you can about the above cross:

Now use correct genetic symbols to rewrite above, the P cross.

Part B:

Choose any two experiments. For each experiment, do a Chi-Squared analysis to justify your response. Be certain to clearly state your “null hypothesis”.

Experiment # 2 Null Hypothesis:	Chi Squared calculations:
Rejected or not? Explain	
Experiment # 3 Null Hypothesis:	Chi Squared calculations:
Rejected or not? Explain	