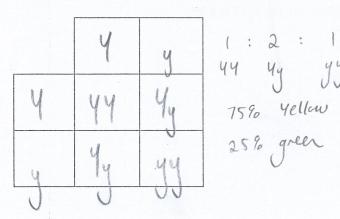1. In garden peas, **round seed coats** (R) is dominant over **wrinkled seed coats** (r). What will the results be of a cross between a <u>homozygous dominant male</u> and a <u>recessive female</u>?

	R	R
/	Rr	Rr
/	Rr	Rr

100% = Rr
100% = Round

2. In peas, **yellow color** (Y) is dominant to **green** (y). What will be the results of a cross-pollination of a <u>heterozygous female</u> and a <u>heterozygous male</u>?

	Y	y
Y	YY	Yy
y	Yy	yy

1 : 2 : 1
YY Yy yy

75% Yellow
25% green

3. In humans, **straight toes** (S) is dominant over **curled toes** (s). What would be the result of a cross between a <u>recessive male</u> and a <u>heterozygous female</u>?

	S	s
S	Ss	Ss
S	ss	ss

1 : 1
Ss   ss

50% - straight
50% - curled

4. In dogs, **erect ears** (E) is dominate over **droopy ears** (e). What are the results if <u>two heterozygous dogs</u> have a litter of puppies.
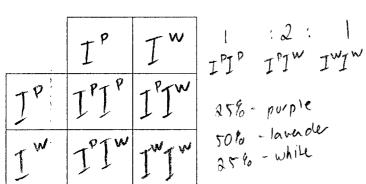
	E	e
E	EE	Ee
e	Ee	ee

1 : 2 : 1
EE Ee ee

¾ erect ears
¼ droopy ears

5. The ability to **roll the tongue** (R) is determined by a dominant gene while the recessive gene results in the **inability to roll the tongue** (r). A <u>man and his wife can both roll their tongues</u> and are surprised to find that their <u>son cannot</u>. Explain this by showing the genotypes of all three persons. (Note: you do not need to do a Punnett Square for this problem).
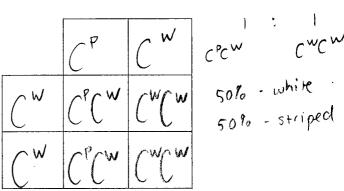
Rr x Rr

= rr

6. In humans, **wavy hair** (H^CH^S) results by the co-dominant situation of **curly hair** (H^CH^C) and **straight hair** (H^SH^S). What are the possible results if a <u>curly-haired man</u> and <u>wavy-haired woman</u> have children.

	H^C	H^C
H^C	H^CH^C	H^CH^C
H^S	H^CH^S	H^CH^S

1 : 1
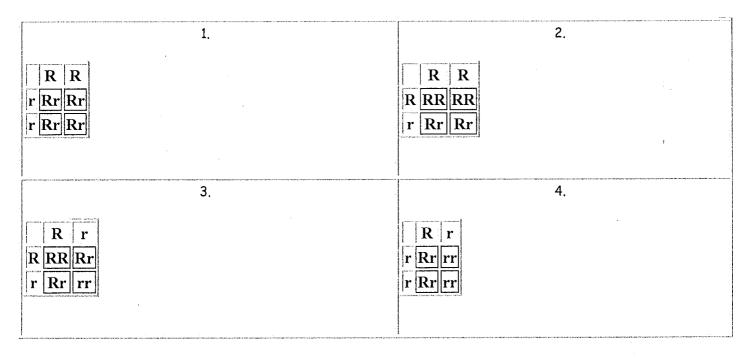H^CH^C H^CH^S

50% - curly
50% - wavy

7. In iris, **purple** (I^PI^P) is incompletely dominant over **white** (I^WI^W). What would be the results of a cross if <u>both parents</u> were **pale lavender** (heterozygous-I^PI^W)?

	I^P	I^W
I^P	I^PI^P	I^PI^W
I^W	I^PI^W	I^WI^W

1 : 2 : 1
I^PI^P I^PI^W I^WI^W

25% - purple
50% - lavender
25% - white

8. In crocus flowers, **white** (C^WC^W) and **purple** (C^PC^P) colours are co-dominant, and result in a **purple and white striped flower** when both genes are present. What are the possible results from the cross-pollination of a <u>striped crocus</u> with a <u>white crocus</u>?

	C^P	C^W
C^W	C^PC^W	C^WC^W
C^W	C^PC^W	C^WC^W

1 : 1
C^PC^W C^WC^W

50% - white
50% - striped

The following Punnett squares show the results of four different crosses Gregor Mendel made with pea plants. In this case, Mendel was looking at flower color with Red (R) being dominant over **white (r)**. For each of the results listed below, write down which cross (Punnett Square) applies.

1.

	R	R
r	Rr	Rr
r	Rr	Rr

2.

	R	R
R	RR	RR
r	Rr	Rr

3.

	R	r
R	RR	Rr
r	Rr	rr

4.

	R	r
r	Rr	rr
r	Rr	rr

a. He crossed a **red flowered** plant with a **white flowered** plant. His results were 126 red flowering plants and 122 white flowered plants. Which Punnett Square applies? __4__

b. He crossed a **red flowered** plant with a **white flowered** plant. His results were 307 red flowering plants and 0 white flowered plants. Which Punnett Square applies? __1__

c. He crossed a **red flowered** plant with a **red flowered** plant. His results were 306 red flowering plants and 110 white flowered plants. Which Punnett Square applies? __3__

d. He crossed a **red flowered** plant with a **red flowered** plant. His results were 300 red flowering plants and 0 white flowered plants. Which Punnett Square applies? __2__