

# Answer Key

## Incomplete Dominance:

1. For a particular plant, a cross between a purebred variety with blue flowers and purebred variety with white flowers results in a plant with light-blue flowers. The cross is written as:



a) What kind of dominance is suggested by this result? Explain why. incomplete dominance

b) Draw a Punnett square for a cross between two plants with light-blue flowers.

c) If 120 plants are produced from crossing two plants with light blue flowers,

i. Predict how many will have the genotypes:

- BB      30
- Bb      60
- bb      30

ii. Predict how many will have the phenotypes:

- blue      30
- light blue      60
- white      30

## Codominance:

2. Draw a Punnett square showing a cross between a father with genotype Ao and a mother with genotype AB.

	A	O
A	AA	AO
B	AB	BO

a) What is the probability that the child will have blood Type O? 0

b) What is the probability that the child will be homozygous Type O? 0

3. A mother has Type A blood and her daughter has Type B blood. What are the possible blood types of the father? Is it possible that the father has Type O blood? Explain your answer.

Father: BB or BO

Father cannot be type O

	A	A
O	AO	AO
O	AO	AO

no B type offspring

Sex Linkage:

4. The inheritance of eye colour in fruit flies is sex linked.

♀ = female ♂ = male

$X^R$  = red eye (dominant)

$X^r$  = white eye (recessive)

a) Use the symbols above to draw a Punnett square showing the outcome of a mating of a female with one allele for red eyes and one allele for white eyes with a white-eyed male.

b) What percentage of the offspring will have

- White eyes? 50%

- Red eyes? 50%

c) Are the red-eyed male offspring able to pass the white eyed trait on to the next generation? No

d) Are the red-eyed female offspring able to pass the white-eyed trait on to the next generation? Yes

	$X^R$	$X^r$
$X^r$	$X^R X^r$	$X^r X^r$
Y	$X^R Y$	$X^r Y$