

- (b) Seed colour in wheat is an example of polygenic inheritance. There are three genes thought to affect seed colour (A, B, C). Each gene has a dominant and recessive allele.

A cross between two heterozygous plants (AaBbCc) was carried out.

The seed colour of the offspring was recorded.

The table below shows the phenotype of the wheat seed colour, the number of recessive alleles and the frequency of seed colour in the offspring.

Colour of wheat seed	Number of recessive alleles	Frequency of seed colour
White	6	1
Very light red	5	6
Light red	4	15
Intermediate red	3	20
Red	2	15
Moderate red	1	6
Dark red	0	1

Explain this variation in the colour of wheat seeds.

(3)

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(Total for Question 5 = 10 marks)