

**GCSE Biology B (Twenty First Century Science)**  
**J257/03 Breadth in Biology (Higher)**

**Question Set 7**

1

A gene affects whether people have dimples in their cheeks. There are different variants of this gene.

An individual with the dominant variant, D, of this gene will have dimples.

(a) (i) Jack and his wife Nina both have dimples.

Their daughter Mia does not have dimples

Complete the table to show the genotype of each individual.

Individual	Genotype
Jack	Dd
Nina	Dd
Mia	dd

[3]

(ii) Jack and Nina decide to have another child.

What is the probability that the second child will have

dimples? Use the Punnett square to show your working.

	D	d
D	DD	Dd
d	Dd	dd

Probability that the child will have dimples = ...75%.....

[2]

(b) Scientists consider this trait an 'irregular' dominant trait. This is because sometimes a person can have dimples but their children do not.

What could be responsible for this difference?

Both parents are heterozygous.

[1]

**Total Marks for Question Set 7: 6**

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