

Questions about genetic disorders Homework

Q1.Some genetic disorders are caused by alleles inherited from the parents.

(a) What are **alleles**?

.....
.....

(1)

(b) Describe how embryos can be screened for the alleles that cause genetic disorders.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

(4)

(c) Polydactyly is a genetic disorder that leads to extra fingers or toes.

Polydactyly is caused by a dominant allele, **D**.

The photograph shows the hand of a person with polydactyly.



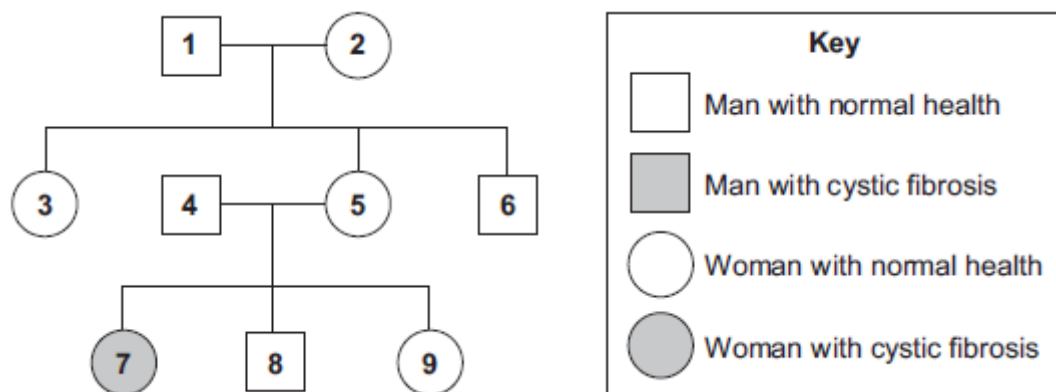
A man has polydactyly. His wife does not have polydactyly.

This couple's children have a 50% chance of having polydactyly.

Draw a genetic diagram to explain why.

(3)

- (d) Cystic fibrosis is another genetic disorder. It is caused by a recessive allele.
The diagram shows the inheritance of cystic fibrosis in one family.



Woman **5** is pregnant with her fourth child.

What is the probability that this child will have cystic fibrosis?

Draw a genetic diagram to explain your answer.

Use the following symbols.

N = allele for normal health
n = allele for cystic fibrosis

(4)
(Total 12 marks)

