

Biology unit 6 homework – Inheritance

For each of the questions below: -

Highlight the command word if there is one & annotate what the command word means. - Answer the question!

Q1. This question is about reproduction.

(a) Complete the sentences.

Choose answers from the box.

asexual	clones	eggs	gametes
meiosis	mitosis	sexual	variation

Identical offspring are produced by _____ reproduction.

These offspring are called _____ .

In another form of reproduction male and female _____
join at fertilisation.

This leads to _____ in the offspring.

The embryo grows by a type of cell division called _____ .

(5)

(b) The body cells of a kangaroo have 16 chromosomes.

How many chromosomes will an egg cell of a kangaroo have?

Tick **one** box.

4 8 16 32

(1)

(c) Which sex chromosomes will be in the body cells of a male kangaroo?

Tick **one** box.

XX XZ XY YZ

(1)

Different species of animal have different numbers of chromosomes in their body cells.

The table shows the chromosome number of some species.

Species of animal	Number of chromosomes in each body cell
Giraffe	62
Human	46
Kangaroo	16

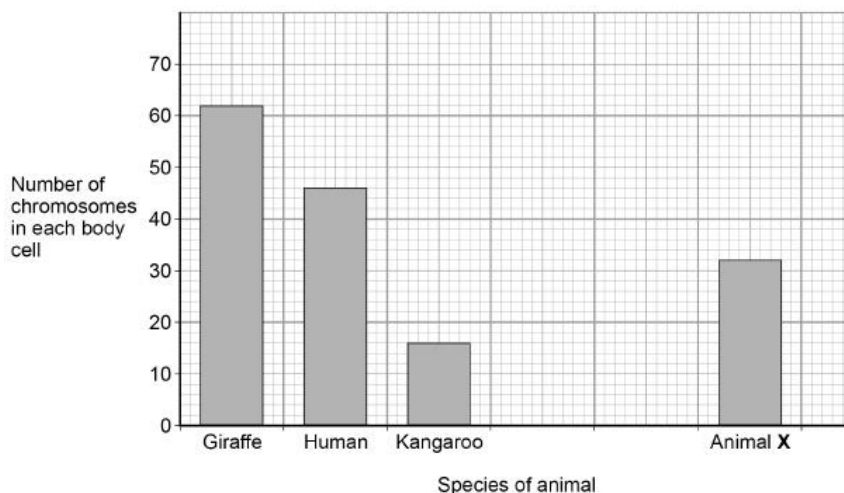
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Snail	24
Zebra fish	50

- (d) Plot the data from the table for the snail and for the zebra fish on the graph.



(2)

- (e) Look at the graph.

How many more chromosomes are there in the body cells of giraffes than in the body cells of animal X?

Number of chromosomes = _____

(1)

- (f) A student concluded:

'the bigger an animal, the more chromosomes it has in each body cell.'

This is **not** a valid conclusion.

Give **one** reason why.

(1)

Q2 Pompe disorder is an inherited condition that affects thousands of people.

Pompe disorder is caused by the GAA gene.

- (a) What is a gene made of?

_____ (1)

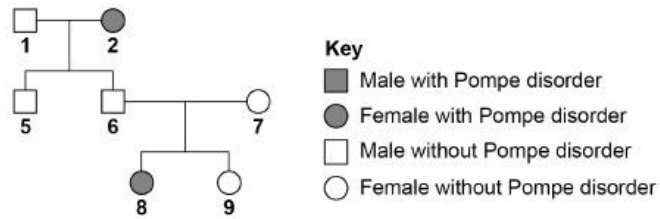
Figure 1 shows the inheritance of Pompe disorder in one family.

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Figure 1



Pompe disorder is caused by a recessive allele.

r is the allele for Pompe disorder

R is the allele for no Pompe disorder

(b) Person 2 has Pompe disorder.

What is the genotype of person 2?

(1)

(c) Look at **Figure 1**.

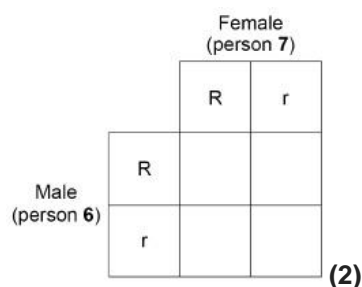
Explain how we can tell Pompe disorder is caused by a recessive allele.

(2)

(d) Persons 6 and 7 decide to have another child.

Complete the genetic diagram in **Figure 2**.

Figure 2



(e) Draw a ring around any offspring in **Figure 2** who will have Pompe disorder.

(1)

(f) What is the probability of persons 6 and 7 having another child with Pompe disorder?

(1)

Q3 Living things can be classified into groups.

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- (a) Scientists look at structures inside cells to classify living things.

Suggest **one** structure found in cells that can be used to classify living things.

(1)

- (b) The table below shows one system for classifying humans. Fill in the missing gaps (3)

X	Animalia
Phylum	Chordata
C _____	Mammalia
Order	Primates
F _____	Hominidae
Genus	<i>Homo</i>
S _____	<i>Sapiens</i>

Who devised this system of classification?

Tick **one** box.

Darwin

Linnaeus

Wallace

Woese

(1)

- (c) Look at the table above.

X is the largest category in this classification.

Name category **X**.

(1)

- (d) Give the **binomial name** of humans