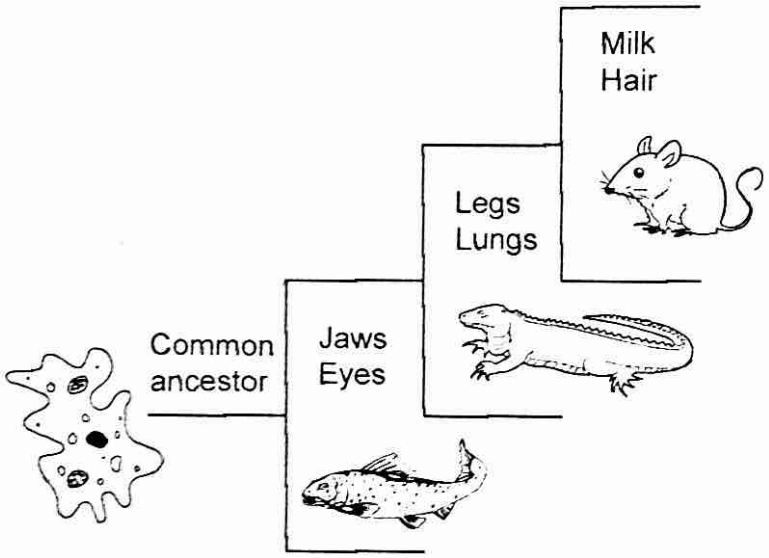
Evolution Quiz

Name _____ Date _____

Class/Grade _____

Directions: The diagram below shows a clade. A clade is a group of organisms that arise from a common ancestor. Organisms in a clade share homologous, or similar, features. Use the diagram and your knowledge of science to answer any questions that follow.



1 Which homology reveals that mice and fish arose from a common ancestor?

A The absence of legs

B The absence of lungs

C The presence of eyes

D The presence of gills

2 Which homology reveals that lizards and mice arose from a common ancestor?

F The inability to grow hair

G The ability to produce milk

H The presence of lungs

J The absence of eyes

GO ON

3 According to the endosymbiotic theory, eukaryotic cells came to exist because prokaryotic cells surrounded and incorporated bacteria. These bacteria eventually became organelles. Biologists disagree as to whether prokaryotic cells engulfed bacteria only once or on multiple occasions. If prokaryotic cells engulfed bacteria on multiple occasions, there would be a clearer understanding of why eukaryotic cells found in different species possess —

A no complex structures.

B similar complex structures.

C identical complex structures.

D different complex structures.

4 Homologous structures are defined as anatomical structures originating from the same structure in ancestral form. For instance, a bird's wing and the front flippers of a seal are examples of homologous structures. Which of the following does the presence of homologous structures in vertebrates suggest?

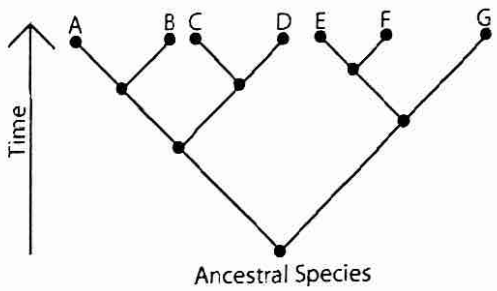
F All vertebrates developed at the same rate.

G All vertebrates evolved from different animals.

H All vertebrates have a common ancestor.

J All vertebrates developed internally.

5 The illustration below represents the pathways of adaptation of seven living species, A through G.



Which two species are likely to have the most similar DNA base sequences?

A C and D

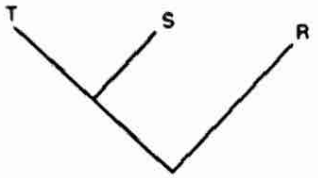
B B and G

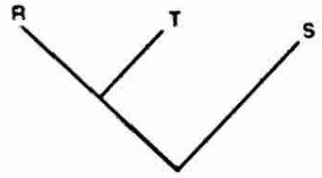
C B and C

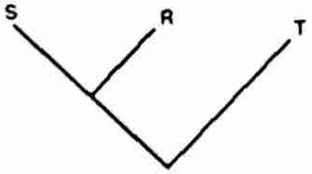
D E and G

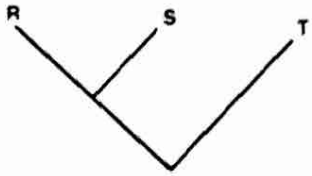
GO ON

6 Three different bird species are represented by the letters R, S, and T. Species S and T show similar coloration. The enzymes found in species R and T show similarities. Species R and T also exhibit many of the same behavioral patterns. Which figure best shows the relationship between species R, S, and T?

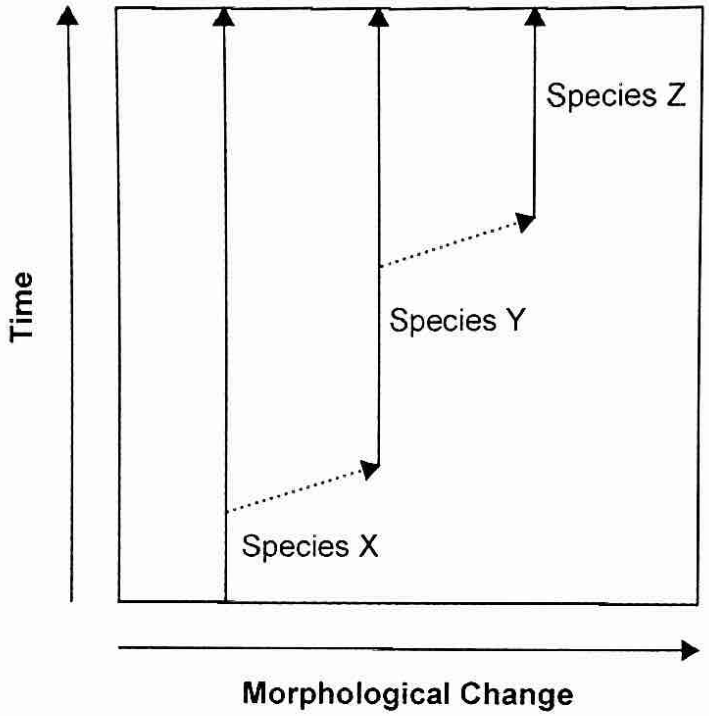
F 

G 

H 

J 

7 The diagram below illustrates the changes in a species, or speciation, as time progresses.



What does the diagram indicate about the appearance of organism Z in the fossil record?

A It developed through the evolutionary pathway of convergent evolution.

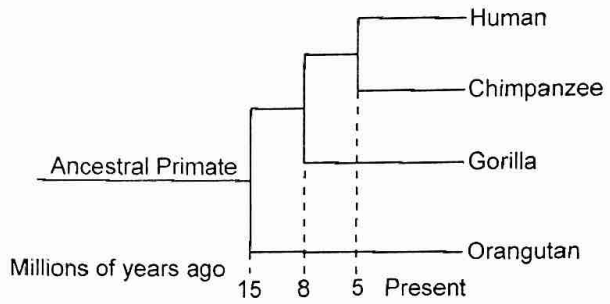
B It developed through the evolutionary pathway of punctuated equilibrium.

C It developed through the evolutionary pathway of gradualism.

D It developed through the evolutionary pathway of stasis.

GO ON

8 The diagram below shows a comparison of nitrogen base sequences in the DNA of some organisms to those in the DNA of humans.



According to this diagram, modern humans appear to be most closely related to the –

F orangutan.

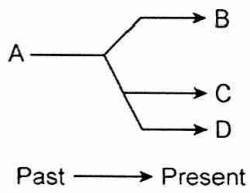
G chimpanzee.

H ancestral primate.

J gorilla.

GO ON

9 In the diagram below, *B*, *C*, and *D* represent organisms that currently exist. These organisms have very similar skeletons.



Letter *A* most likely represents —

A geographic distribution.

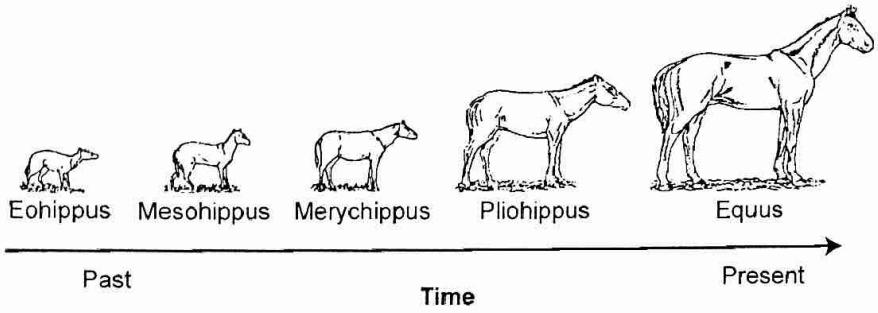
B an acquired characteristic.

C a common ancestor.

D a homologous structure.

GO ON

10 The diagram below shows the change over time in the anatomy of horselike organisms to the modern day horse.



Which concept is best illustrated by the physical variations in the horse as its body size and structure changed over time?

F Gradual adaptation over successive generations

G Punctuated equilibrium over two generations

H Artificial selection

J Acquired characteristics