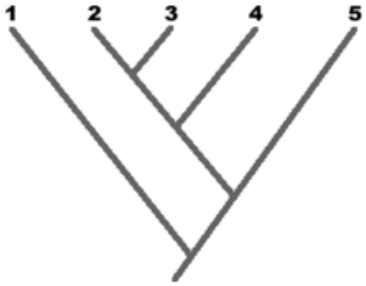
CLADOGRAM PRACTICE

Name:_____ **Per:**____

1. Based on the cladogram shown, we can conclude that species 2 is most closely related to species

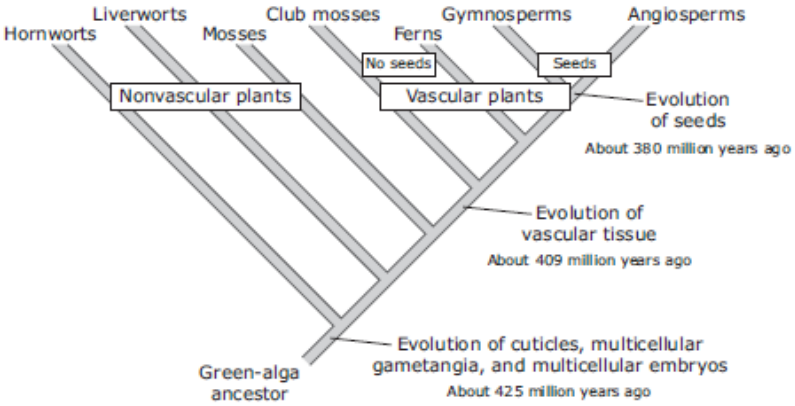
A. 1 B. 3 C. 4 D. 5 E. 1 or 3



2. The cladogram shows the evolution of land plants as indicated by fossil records.

Which discovery would challenge the validity of this cladogram?

A A large aquatic vascular plant about 200 million years old
B A species of algae that has existed for less than one million years
C A moss species that has existed for less than 380 million years
D A fossil of a fern more than 425 million years old

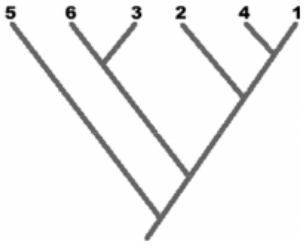


3. Use the following characteristics of these organisms to make a cladogram. Remember that all organisms started with a common ancestor, so all cladograms should start from a single point and branch as they develop differing characteristics.

Characteristics	Shark	Bullfrog	Kangaroo	Human
Vertebrae	X	X	X	X
Two pairs of limbs		X	X	X
Mammary Glands			X	X
Placenta				X

4. Consider the cladogram associated with the question. Which pair of species shares the greatest number of derived characters?

A. 1 and 4
B. 6 and 3
C. 6 and 1
D. 5 and 6
E. 5 and 1



5. A common ancestor for both species C and E could be at position number

A) 1 B) 2 C) 3 D) 4 E) 5

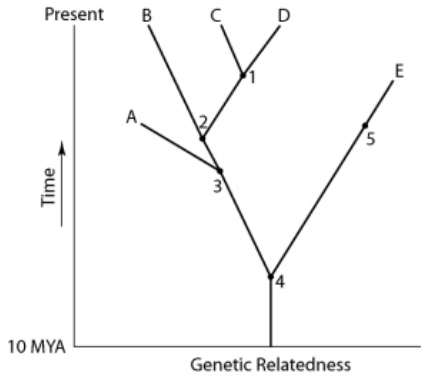


Figure 26.1

6. Use the following data table to construct a cladogram of the major plant groups below. The table shows which plants have the traits listed.

Organism	Vascular Tissue	Flowers	Seeds
Mosses	0	0	0
Pine Trees	1	0	1
Flowering Plants	1	1	1
Ferns	1	0	0
Total	3	1	2

7. Create a branching cladogram from the evidence below

	Vertebrae?	Bony skeleton?	Four limbs?	Amniotic egg?*	Hair?	Two post-orbital fenestrae?**
Sharks and relatives	YES	no	no	no	no	no
Ray-finned fishes	YES	YES	no	no	no	no
Amphibians	YES	YES	YES	no	no	no
Primates	YES	YES	YES	YES	YES	no
Rodents and rabbits	YES	YES	YES	YES	YES	no
Crocodiles and relatives	YES	YES	YES	YES	no	YES
Dinosaurs and birds	YES	YES	YES	YES	no	YES