

## Evolution Homework 2

**Part One: IDENTIFICATIONS (IDs).** Use the book to help you identify the following. Be as specific as possible, and include names, dates, and relevant facts as appropriate. Be sure to explain the significance of the term. There should be a minimum of three (3) sentences for each ID. Use of the internet is okay if you are stuck, as long as you do not plagiarize.

**Chapter 25: Phylogeny and Systematics, Page 491, 7<sup>th</sup> edition**

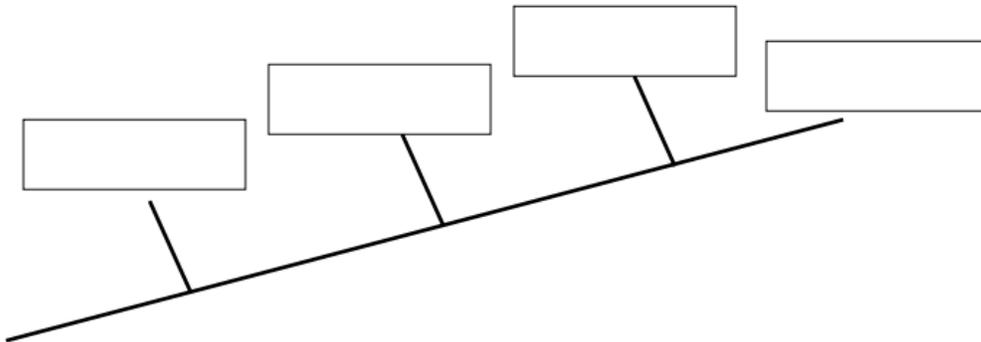
- A) Phylogeny
- B) Fossil record
- C) Derived character
- D) Primitive character
- E) Taxonomy
- F) Binomial nomenclature

**Part Two: Cladograms.** Follow the instructions below to make a cladogram.

1) Fill in the following table. Mark an 'X' if an organism has each trait.

	hair	legs	thumbs	eyes
<b>Human</b>				
<b>Snake</b>				
<b>Monkey</b>				
<b>Mouse</b>				

2) Add each of these organisms to the cladogram below: human, snake, monkey, mouse.



3) USING COMPLETE SENTENCES, explain why you put each organism where you did on the cladogram.

4) On the cladogram above, add traits that make the organisms different from each other, like we did on our notes.

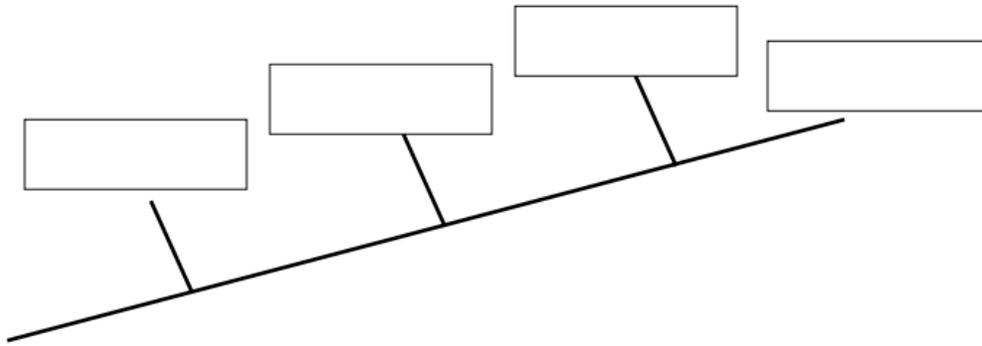
5) According to your cladogram, which two species are more closely related: humans and snakes or humans and mice? How do you know?

6) According to your diagram, what species are humans most closely related to? How do you know?

7) Fill in the following table. Mark an 'X' if an organism has each trait:

	cells	legs	6 legs	wings
<b>Worm</b>				
<b>Spider</b>				
<b>Ant</b>				
<b>Fly</b>				

8) Add each of these organisms to the cladogram below: worm, spider, ant, fly.



9) USING COMPLETE SENTENCES, explain why you put each organism where you did on the cladogram.

10) On the cladogram above, add traits that make the organisms different from each other, like we did on our notes.

11) According to your cladogram, which two species are more closely related: worms and spiders or worms and ants? How do you know?

12) According to your cladogram, what species are flies most closely related to? How do you know?

**Part Three: Inquiry with Phylogenetic Trees**

13) Draw a phylogenetic tree based on the first 5 characters in the table below. Place hatch marks on the tree to indicate the origin(s) of each of the six characters.

Character	SPECIES						
	Lancelet (outgroup)	Lamprey	Tuna	Salamander	Turtle	Leopard	Dolphin
Backbone	0	1	1	1	1	1	1
Hinged jaw	0	0	1	1	1	1	1
Four limbs	0	0	0	1	1	1	1*
Amniotic egg	0	0	0	0	1	1	1
Milk	0	0	0	0	0	1	1
Dorsal fin	0	0	1	0	0	0	1

\*Although adult dolphins have only two obvious limbs (their flippers), as embryos they have two hind-limb buds, for a total of four limbs.