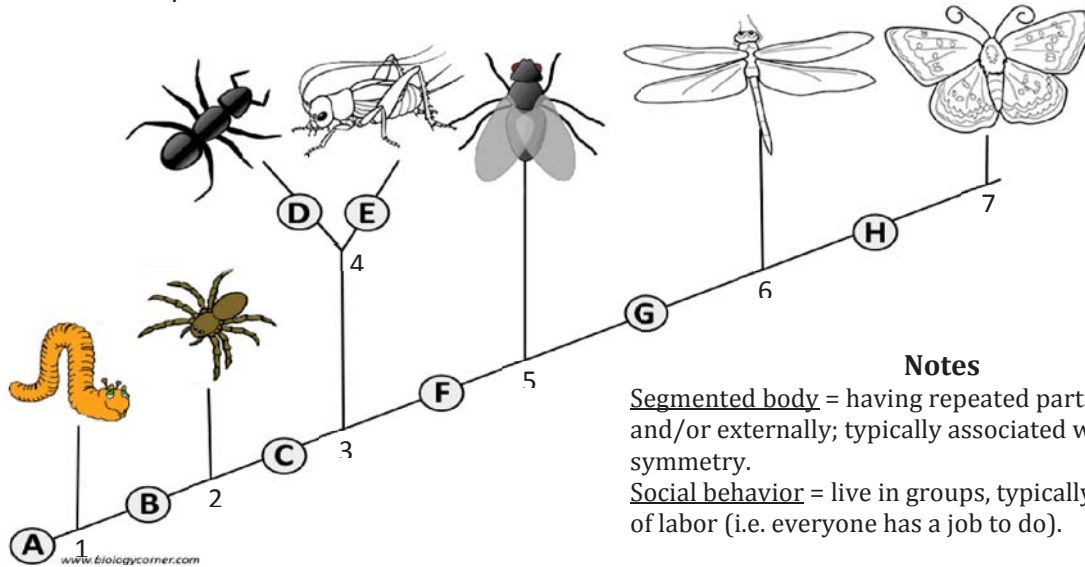


CLADOGRAM ANALYSIS

Examine the sample cladogram (*Note: this cladogram was created for simplicity and understanding; it does not represent the established phylogeny for insects and their relatives*)

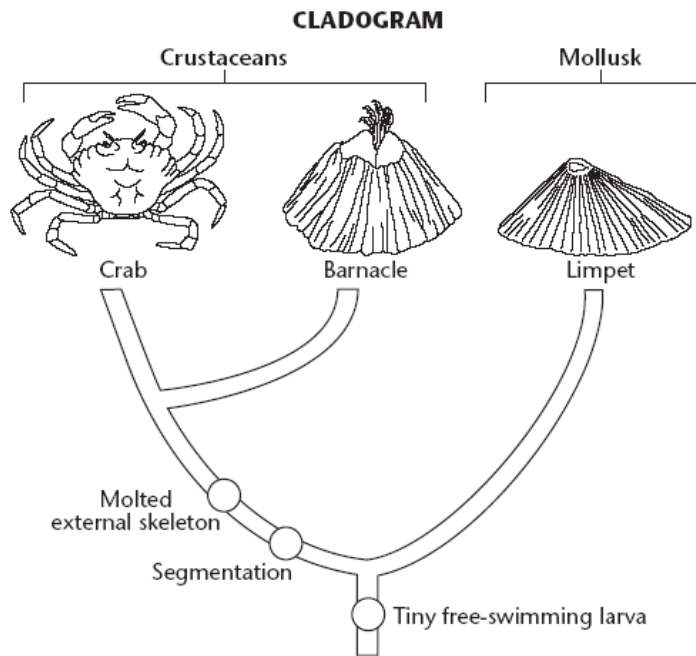
- Each letter represents a derived character.
- Each number represents a node.



- Match each letter on the diagram to its derived character.

a. ___ Wings	d. ___ Double set of wings	g. ___ Legs
b. ___ 6 Legs	e. ___ Jumping Legs	h. ___ Curly Antennae
c. ___ Segmented Body	f. ___ Social behavior observed	
- Which organisms share derived character C?
- What does node 6 represent?
- The hypothetical organism at node 3 is the common ancestor for what pictured organisms?
- Which of the following, taken by themselves, do not form a clade?
 - Fly, dragonfly, and butterfly
 - Grasshopper and ant
 - Grasshopper, ant, and fly
 - Ant, grasshopper, fly, dragonfly, and butterfly
- Which of the following provides a complete list of organisms in a given clade?
 - Spider, ant, and grasshopper
 - Worm, spider, fly, dragonfly, and butterfly
 - Fly, dragonfly, and butterfly
 - Worm and butterfly
- Which two organisms share the most recent common ancestor?

8. Examine the cladogram below and answer the questions that follow:



- Which two organisms belong to a clade that does not include the third organism?
- Circle the point on the cladogram that shows the most recent common ancestor of the crab and the barnacle.
- What derived character(s) are shared by the crab and the barnacle, but not the limpet?
- Mark an X at the point on the cladogram that shows the most recent ancestor of crustaceans and mollusks.
- What derived character is shared by all three pictured organisms?