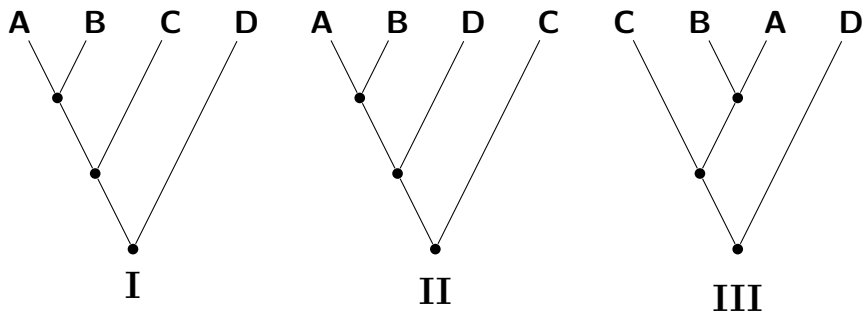
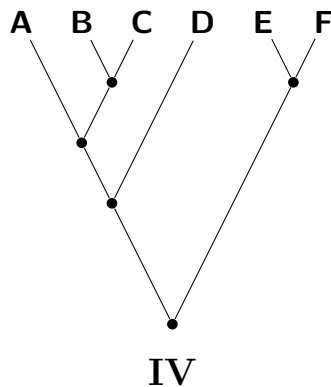


Please answer the following questions. Please **DO NOT** provide your name.

1. I am an  **undergraduate**  **graduate** student in year  **1**  **2**  **3**  
 **4**  **5**  **6**  \_\_\_\_\_ of my program of study.
2. Below are three rooted phylogenetic trees showing the relationships of species A, B, C, and D. Which trees show the same relationships?
- Tree I and II.
  - Tree I and III.
  - Tree II and III.
  - All.
  - None.

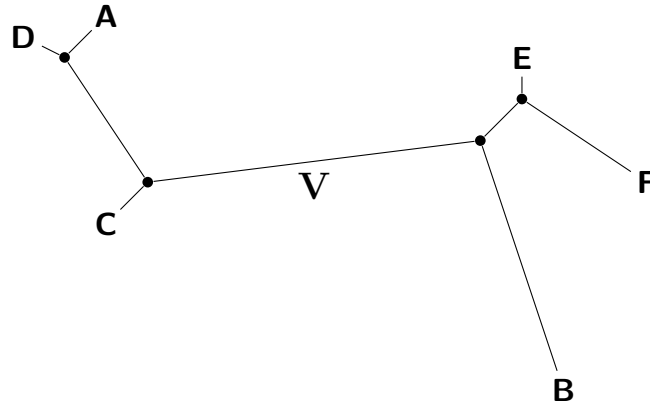


3. In reference to the rooted Phylogeny IV below, which of the following statements are correct?
- A and B are sister species.
  - Species B, C, and D are monophyletic.
  - Species A, B, and C are paraphyletic.
  - Species D is more closely related to A than E.



4. In reference to the unrooted Phylogeny V below, which of the following statements are always correct?

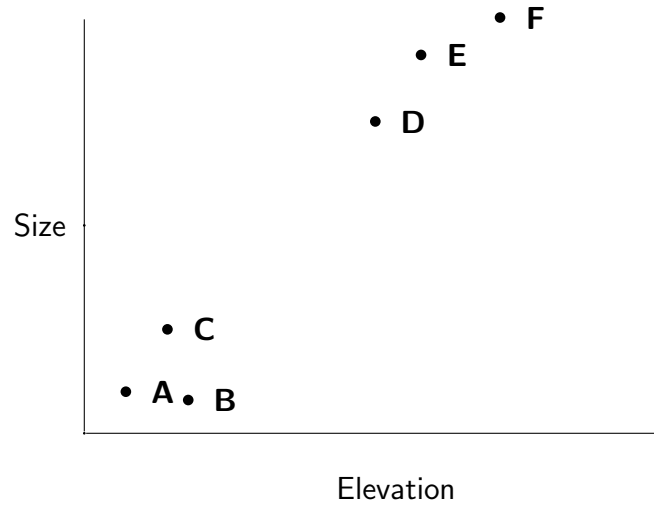
- A and D are sister species.
- Species A, D, and C are monophyletic.
- Species D is more closely related to A than B.
- All of the above.
- None of the above.



5. Assuming the lengths of the branches on the unrooted Phylogeny V above are in units of evolutionary distance, what does the length of each branch represent?

- Time.
- Rate of evolutionary change.
- Geographic distance.
- The product of time and the rate of evolutionary change.

6. Species A–F live along the side of a mountain. We notice that individuals of species living at higher elevations tend to be larger than those at lower elevations. We hypothesize that the species have adapted to grow larger at higher elevations. We collect the following data on the adult size and elevation of each species.



Below are two possible phylogenies for the species, one of which is correct. Under which phylogeny are you more convinced that our hypothesis is correct?

- VI  
 VII

