

**Self-Study Problems #4: Primates**

1. Studies of several different species of primates show that the infants of these species need to have a lot of contact with an adult, particularly their mother, in order to develop normal social behavior. The researchers suggest that we should expect the same to be true of human infants.

They are making an argument by, or based on, homology.

2. Studies of numerous species of primates find that species in which individuals have many different mates tend to have males that are significantly larger than females, while those that form permanent mating pairs tend to have males and females of roughly the same size. Both arrangements occur in several different branches of the primate phylogeny. Compared to the differences seen in other primates, human males and females are similar in size. Researchers say that this suggests that during the recent evolution of humans, our ancestors tended to form long-term mating pairs.

They are making an argument by, or based on, analogy.

3. Primates have some characteristics by virtue of being descended from the common ancestors of all other mammals. List some of these characteristics:

- a. lactation / mammary glands / nurse young
- b. live birth / viviparity
- c. long gestation
- d. hair
- e. warm bloodedness / homeothermy
- f. large brains for body size; flexible behavior

4. List some characteristics related to manual dexterity that distinguish primates from other mammals.

- a. prehensile (grasping) hands and feet
- b. opposable big toe / thumb
- c. flat nails in place of claws; finger pads with fingerprints

5. List some distinguishing characteristics related to senses that distinguish primates from other mammals.

- a. reduced sense of smell in diurnal species
- b. developed vision; large eyes
- c. eyes in front for binocular vision
- d. optic nerves split to both sides of brain for stereo vision
- e. trichromatic color vision in diurnal species

6. List some characteristics related to behavior that distinguish primates from other mammals.
- complex, flexible behavior
  - brain relatively larger for body size
  - long gestation; small litters; long juvenile dependency
  - most live in social groups
7. What sets prosimians apart from other primates?
- many are nocturnal; greater emphasis on smell
  - larger eyes; independently mobile ears; no postorbital plate
  - sensory whiskers; less complex behavior
  - digits act together; grooming claw; dental comb
  - vertical clinging and leaping; smaller brain for body size
8. You are watching a documentary in which primates in the wild are hanging from branches by their tails. What word describes these tails, and what part of the world does the documentary depict?  
*Prehensile tail*  
*New World, or more specifically, Central and/or South America*
9. A documentary shows primates in the wild with very long arms and hook-like hands rapidly moving through the jungle by swinging alternately by one arm, then the other, like a human child on "monkey bars". What is this form of locomotion called? What part of the world does the documentary depict?  
*Brachiation*  
*Southeast Asia*
10. Baboons are a kind of cercopithecine (subfamily), which is a kind of catarrhine (infraorder), which is a kind of anthropoid (suborder) primate.
11. What sets hominoids apart from other primates?
- large size; no tail
  - large brain for body size
  - Y-5 molars
  - arboreal adaptations: wide chest, scapulae on back, more mobile shoulders, elbows, wrists
  - (from book: broader noses, broader palates)
12. What is a human? List three main features that set humans apart from other hominoids.
- bipedal
  - reduced canines
  - big brain for body size; very complex behavior