

9.01 Study Questions

Class 16 (CNS Development, continued)

1. Contrast two types of neuronal migration.
2. What is meant by the “inside-out pattern” of migration in developing neocortex?
3. What is the external granular layer of the cerebellum? What happens to it in the course of mammalian development?
4. Describe a living growth cone as seen in tissue culture. The growth cone was named by _____.
5. What are the two major modes of axon growth? How are they different in structural appearance? How else do they differ?
6. What do you think might cause the mode of axon growth to change?
7. Some developmental neurobiologists have described axon growth as occurring in three stages. How would you subdivide the sequence of axonal growth to get three stages rather than just two? (Study the figure.)
8. One student argues that growing axons lose many connections during development. Another insists that connections show large increases in development. How are both of them correct?
9. Describe developmental pruning of axons, as it occurs naturally (without any damage being inflicted).