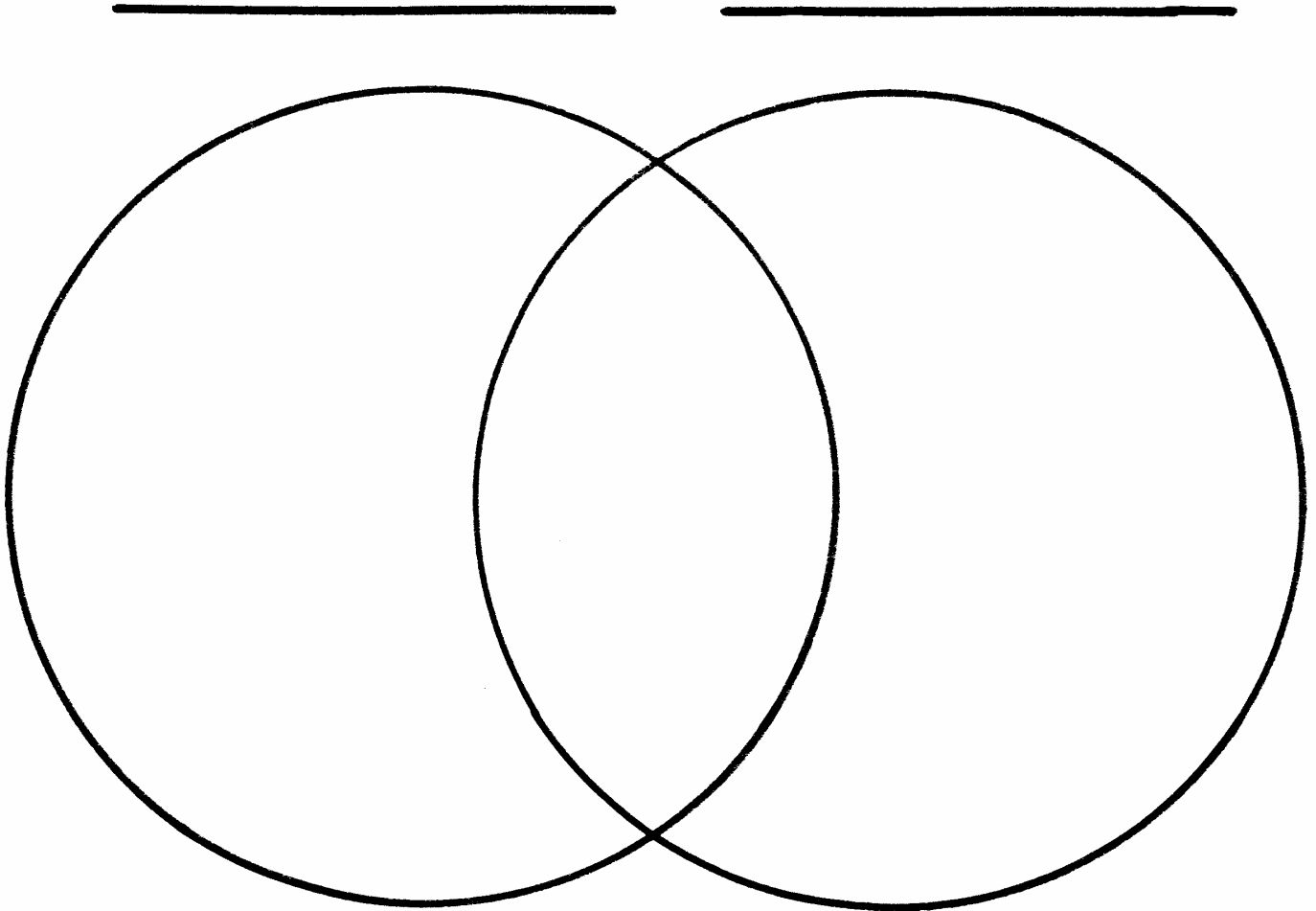


Exercise 3B.1

1. Fill in the Venn Diagram comparing and contrasting the processes involved in mitosis versus meiosis.

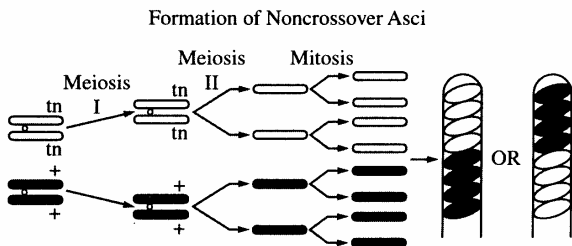


Exercise 3B.2

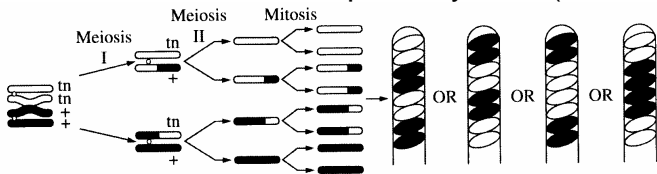
1. What type of sexual life-cycle does *Sordaria fimicola* (fungus) most resemble? (What is its dominant life-stage?)
2. From Mrs. Anderson's lecture notes, draw a flow-chart of the type of sexual life cycle identified in problem one above.

3. Compare your flow-chart to the life cycle of the *Sordaria fimicola*.
  - a. Are the ascospores haploid or diploid? Are they single celled or multicellular?
  - b. What happens when an ascospore discharges from the ascus (sac that contains the ascospores).
  - c. Is the mycelium (network of fungal filament) diploid or haploid? Is the mycelium single celled or multicellular?
  - d. What happens when two different mycelium strains fuse? Is the new stage diploid or haploid?
  - e. What happens to the zygote immediately after fertilization? Is this new stage diploid or haploid?
  - f. How are the ascospores regenerated?

4. When mycelium fusion occurs, explain how this spore coloration pattern occurs if no cross-over occurs between the two haploid mycelia. (Refer to the diagram)



5. When mycelium fusion occurs, explain how this spore coloration pattern occurs if cross-over does occur between the two haploid mycelia. (Refer to the diagram)



6. You count hundreds of asci from the *Sordaria fimicola*. Fill in the data table below.

**Table 3.3**

Number of 4:4 ●●●●○○○○ ○○○○●●●●	Number of Asci Showing Crossover ○○●●○○●● ●●○○●●○○ ○○●●○○○○ ●●○○○○●●	Total Asci	% Asci Showing Crossover Divided by 2	Gene to Centromere Distance (map units)
314	336			