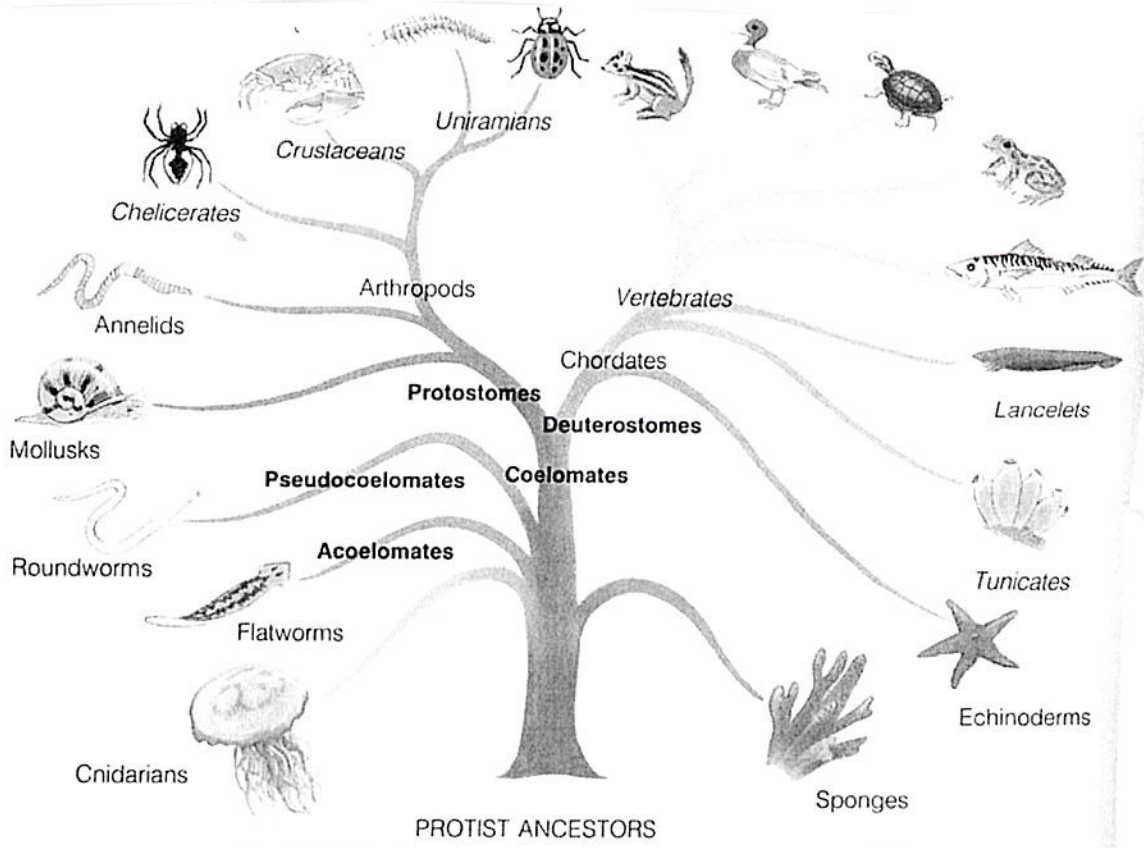


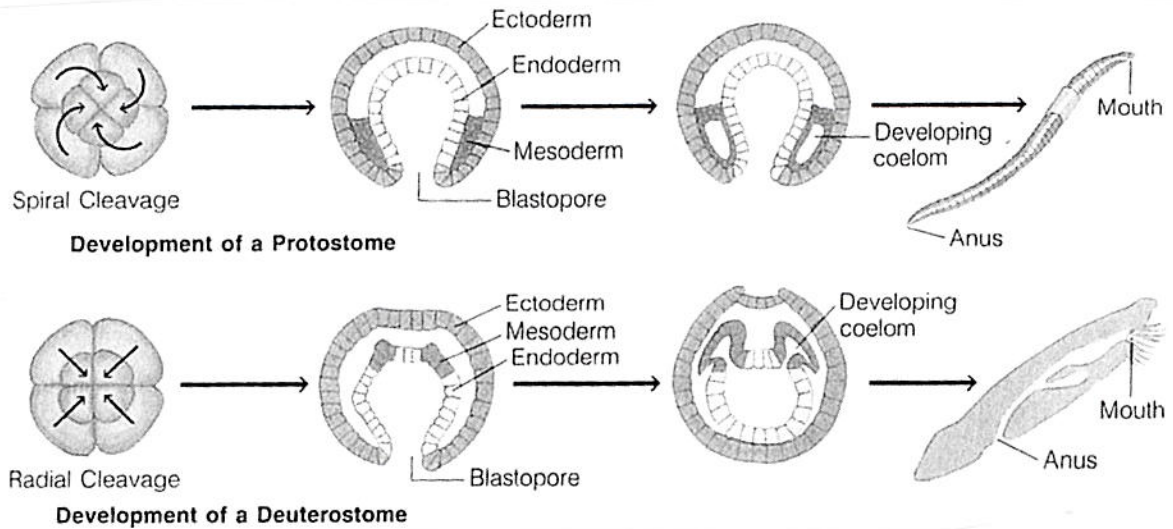
Ch 30 Review - Comparing Invertebrates answers

1. What is a phylogenetic tree? **A diagram that shows the evolutionary relationships between different groups of organisms**
2. Know which organisms are on which branches.

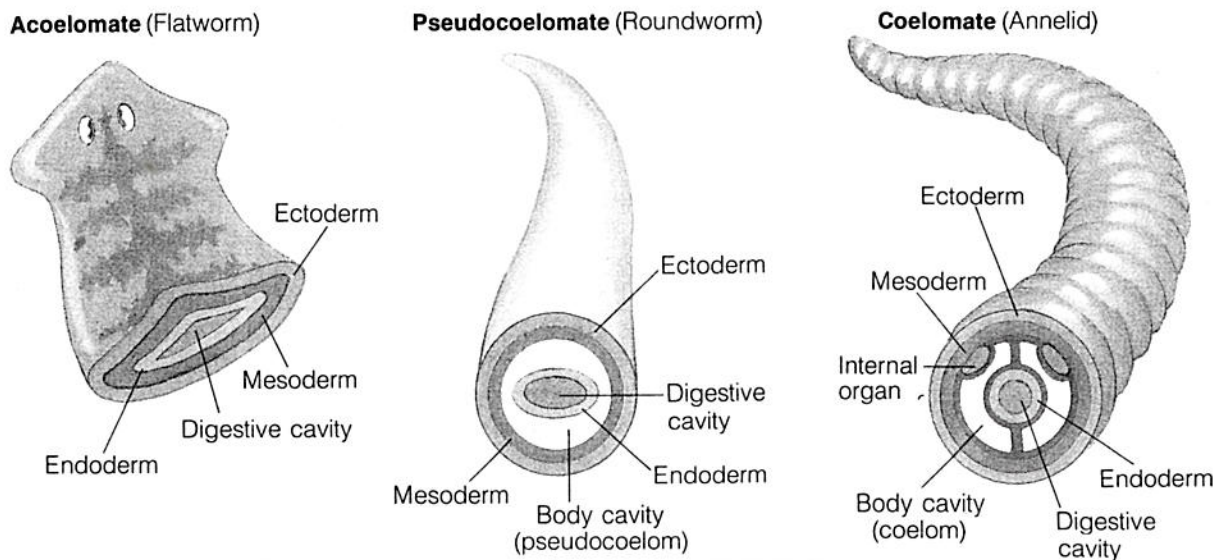


3. What are the 3 branches of the phylogenetic tree that involve the presence of a body cavity? **acoelomate, pseudocoelomate and coelomate**
4. What are the two branches that are based on early development of the embryo? **deuterostome and protostome**

5. What three features are distinctive on the protosomes and deuterostomes? **Protostome have spiral cleavage, first opening becomes the mouth and the mesoderm is formed where the endoderm and ectoderm meet. Deuterostome have radial cleavage, first opening becomes the anus and the second opening becomes the mouth and the mesoderm is formed from pouches of the endoderm**

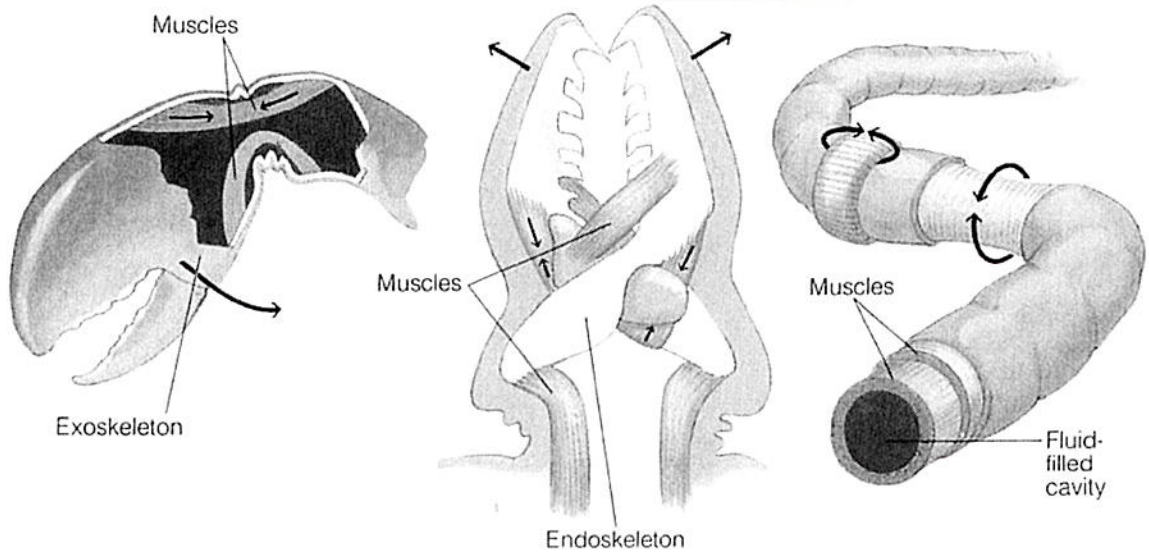


6. Draw and label the acoelomate, pseudocoelomate and coelomate body plans.

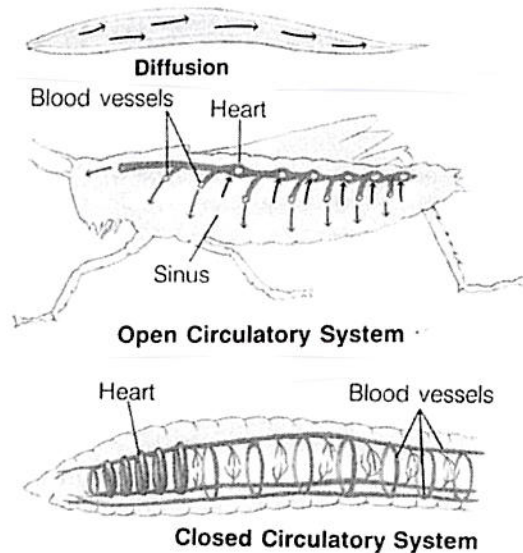


7. How does the presence of mesoderm affect the development with the coelom? **The mesoderm in an acoelomate does not allow for many internal organ. The limited amount of mesoderm in the pseudocoelomate allows for more organ development and the complete lining of mesoderm allows for the most internal organ development in the coelomates.**

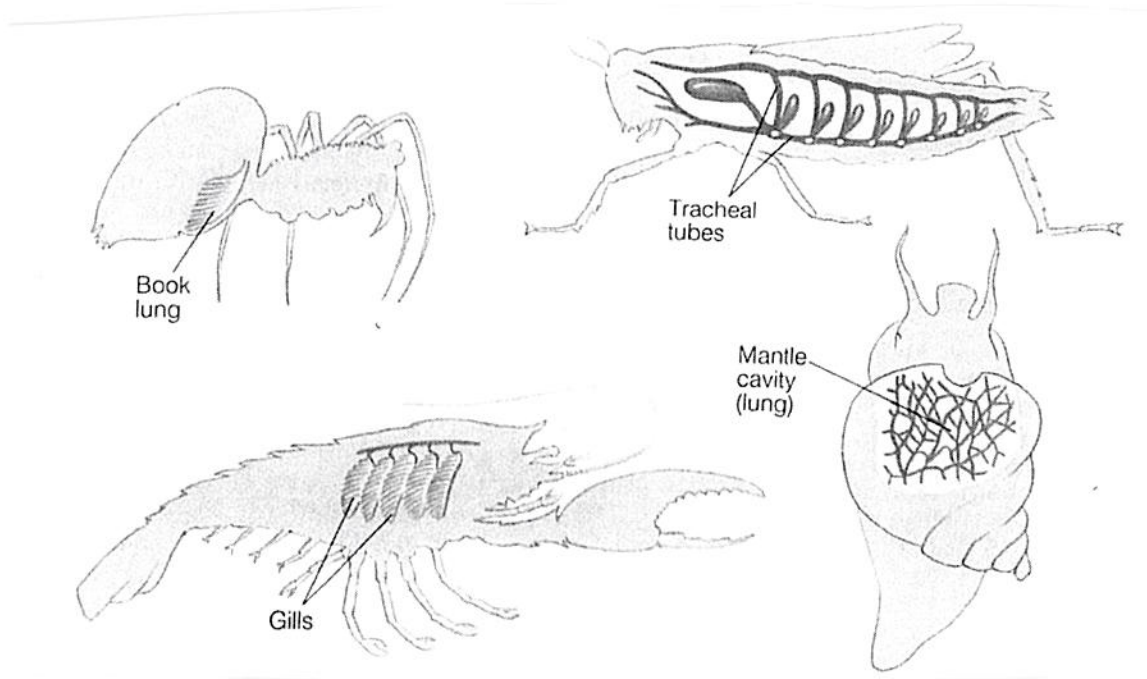
8. Draw and label the three types of skeleton.



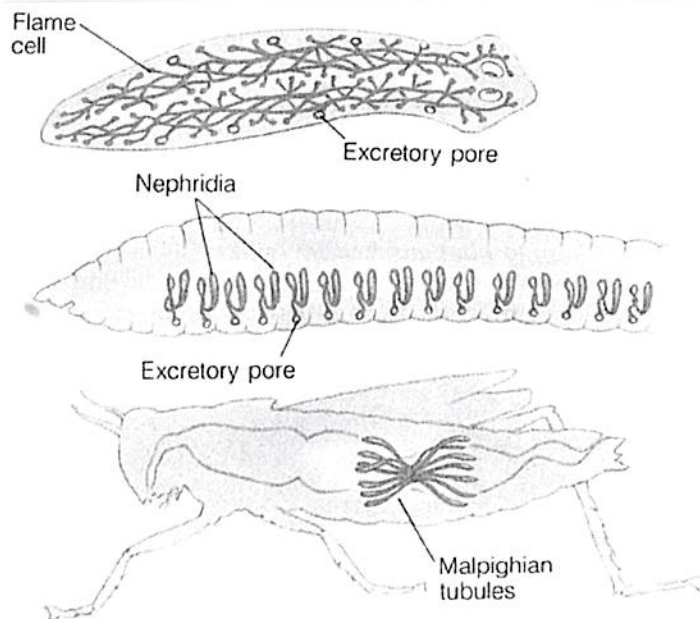
9. What are the three trends in how digestion evolved? **From intracellular to extracellular. From one opening to two opening from simple to more specialized regions within the digestive tract**
10. What are the three trends in how circulation evolved? **From diffusion to open circulation system with blood flowing partially within blood vessels but also flowing in open sinuses to closed circulatory systems where the blood is always found within blood vessels**



11. What are the different types of respiration that have evolved, used by which animals? **Aquatic gills; terrestrial book lungs tracheal tubes and lungs**



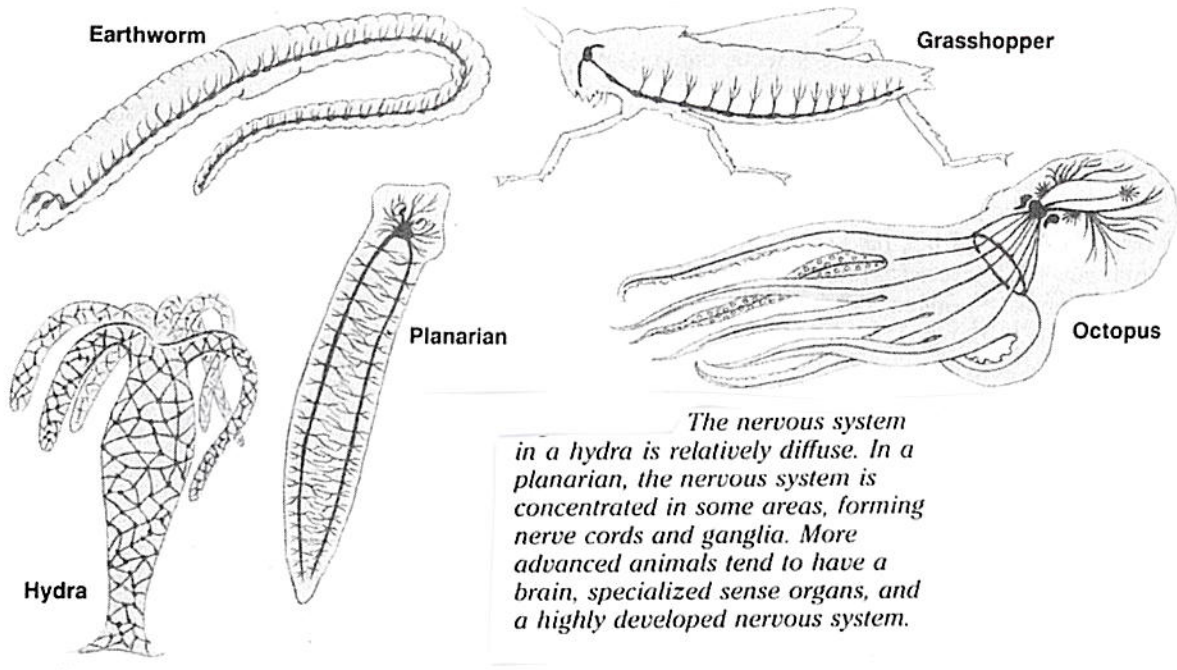
12. What are the different organs of excretion that have evolved?



13. What different forms of nitrogenous wastes are produced and how does it relate to the environment of the animal? **Ammonia is produced by all animals as a waste product. Aquatic animals can dispose of it in this form because they don't have to worry about losing too much water. Terrestrial animals conserve water by changing the ammonia into urea which is less toxic and therefore can be disposed of in urine which conserve some water or by**

changing it into uric acid which can be disposed of in the form of a paste added to the intestine conserving even more water.

14. What are the three trends in nervous systems? **Centralization, cephalization and specialization**
15. Describe these three trends. **Centralization is the concentration of nerves into certain areas. Cephalization is the concentration of the nerves and sense cells into the anterior end of the body. Specialization is the development of a variety of specialized sense organs that can detect light, sounds, chemicals movement and sometimes even electricity**



16. How does asexual or sexual reproduction evolve? **The simplest organisms reproduce by asexual reproduction allowing them to reproduce quickly but doesn't allow for genetic variation. Sexual reproduction maintains genetic diversity allowing them to cope with change. Most have separate sexes although some are hermaphrodites with both sexes.**
17. How does fertilization technique evolve? **The simple organisms fertilize externally while the higher animals fertilize internally which allows for a requirement for a decreasing number of eggs and/or sperm being produced.**
18. How does parental care evolve? **As an organism becomes more evolved they take more care of their offspring allowing for decreased need for large numbers of offspring**