Vocabulary

Brain anatomy: medulla oblongata, pons, cerebellum, brainstem, thalamus, hypothalamus,
cerebral cortex, hippocampus, olfactory bulb, basal ganglia (striatum, pallidum), lobes
of the brain (frontal, temporal, parietal, occipital), dura mater, pia mater, arachnoid
mater, velum interpositum, fourth ventricle, third ventricle, central canal, cerebral
aqueduct, lateral ventricles.

Nervous System Functions: motor, perception, homeostasis, abstract/higher function, motor
hierarchy, "chunking."

Nervous System Organization: central nervous system, peripheral nervous system,
motoneurons, sensory neurons, autonomic nervous system, parasympathetic nervous
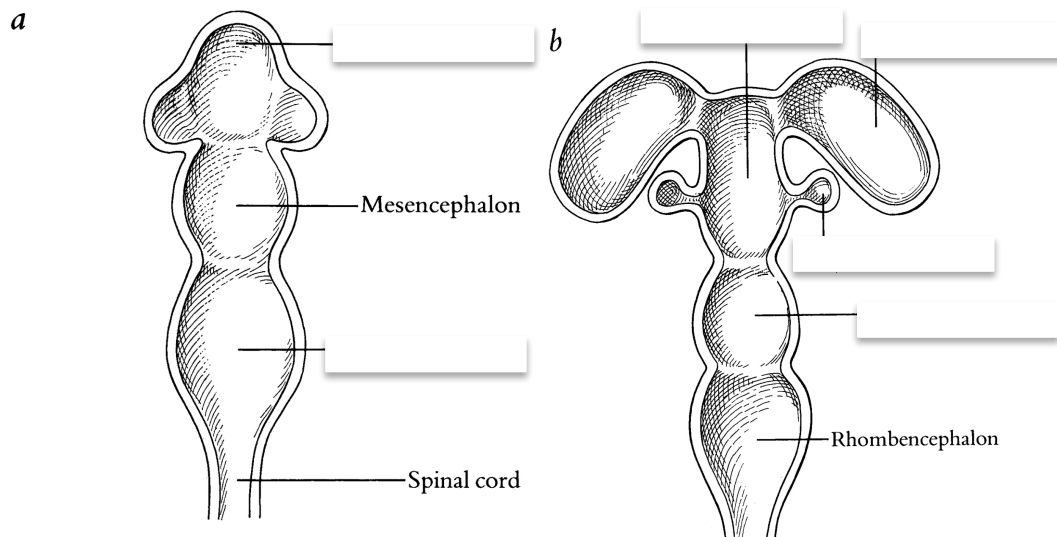system, sympathetic nervous system, enteric nervous system.

Anatomical Orientation: caudal, rostral, medial, lateral, ventral, dorsal, anterior, posterior,
horizontal, sagittal.

Learning Goals:

- Identify vesicles in vertebrate development
- Gain familiarity with terms for anatomical axes
- Name basic functions of regional anatomy of the spinal cord and brain

Early Vertebrate Development

Label developmental vesicles:

This view of the vertebrate nervous system was achieved by slicing the embryo in the _____
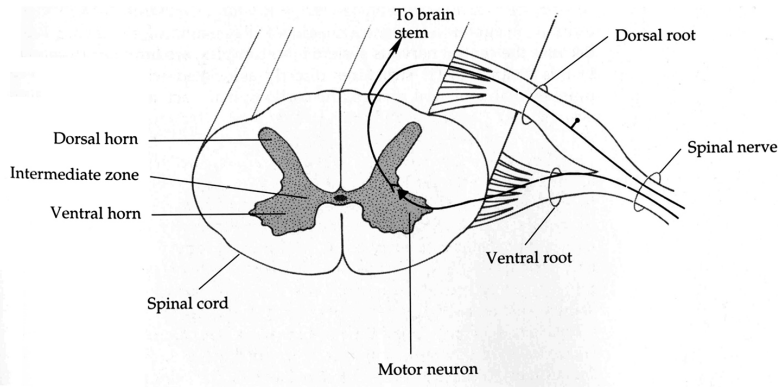(coronal/horizontal/sagittal) plane.

The diencephalon is _____ (medial/lateral) to the optic vesicle.
The optic vesicle is _____ (caudal/rostral) to the rhombencephalon.
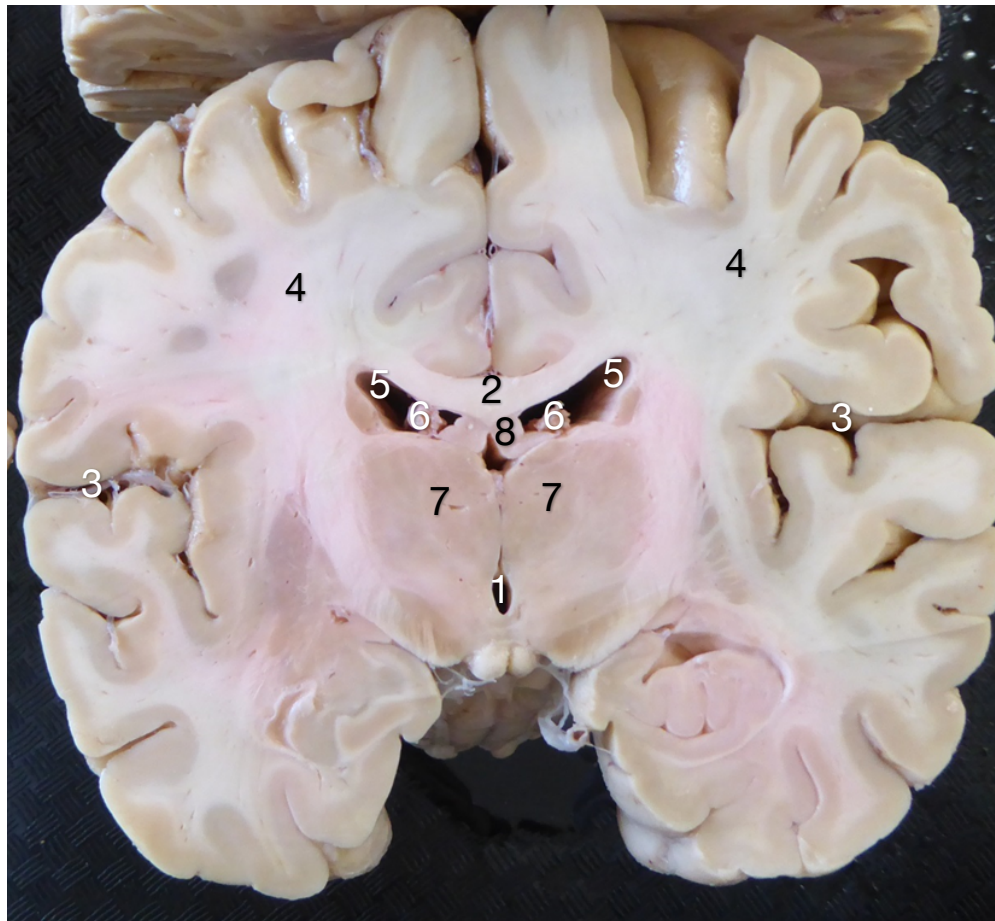The mesencephalon is _____ (anterior/posterior) to the diencephalon.

Adapted from Z Yan Wang

What brain regions do the vesicles in **b** become in the adult? For each region, name structure that composes it in adults.

Spinal Cord Circuitry

(**Sensory/Motor**) neurons make up the dorsal root while (**sensory/motor**) neurons make up the ventral root.

Projections from the dorsal horn are primarily (**ascending/descending**), while those from the ventral horn are primarily (**ascending/descending**).

Label the numbered brain regions:

1.

      2.
      3.
      4.
      5.
      7.

Label the anatomical directions on the diagram:

plane

Anatomical Localisation & Planes in the Human Brain

dorsal

parasagittal (left) **plane**

(right)

Medial

(left)

axial (horizontal) plane

coronal plane

posterior