Summary of Some Definitions and Facts from Overview of Nervous System Lecture

Central nervous system (CNS) = brain and spinal cord
Peripheral nervous system (PNS) = all nerves, ganglia, sense organs outside CNS
Nuclei = groups of nerve cell bodies in CNS
Ganglia = groups of nerve cell bodies in PNS
Tracts = groups of axons in CNS
Nerves = groups of axons in PNS
Afferent axons = axons of sensory neurons (conduct toward CNS)
Efferent axons = axons of motor neurons, neurons of autonomic nervous system; (conduct away from CNS)
Cranial nerves = nerves that arise from brain (there are12)
Spinal nerves = nerves that arise from spinal cord
(Note: **Levels of spinal nerves = C1-C7 above vertebra, C8 and all other below vertebra)**
Dermatome = area of skin innervated by single spinal nerve or cranial nerve

Dorsal root ganglion - contains cell bodies of sensory neurons (no synapses)
Dorsal root of spinal nerve - contains afferent (sensory) axons
Ventral root of spinal nerve - contains efferent axons
Dorsal ramus of spinal nerve - sensory and motor axons going to skin and muscles of the back
Ventral ramus of spinal nerve - sensory and motor axons going to skin and muscles of rest of body
Denticulate ligaments - extension of pia mater, attach to dura
Dermatomes of upper extremity - C6 thumb, C8 little finger

Somatic = voluntary
Somatic efferents - axons innervate skeletal muscle;
Somatic afferents - sensory neurons innervate skin, joints muscles (also oral cavity and nasal cavity); sensory perception is precise
Visceral = involuntary
Visceral efferents - innervate smooth muscle, glands, gut, blood vessels
Visceral afferents - sensory neurons innervate internal organs; sensory perception is imprecise
Spinal cord ends inferiorly - L1 in adult, L3 in children
Lumbar puncture - do at L3-4, L4-5 in adults; L4-5 in children
Lumbar puncture structures passed through - SFSIFpopEDpopA (see lecture)
Dural sac ends - S2 (adult)
Filum terminale attaches inferiorly - Co1 (first Coccygeal vertebra)