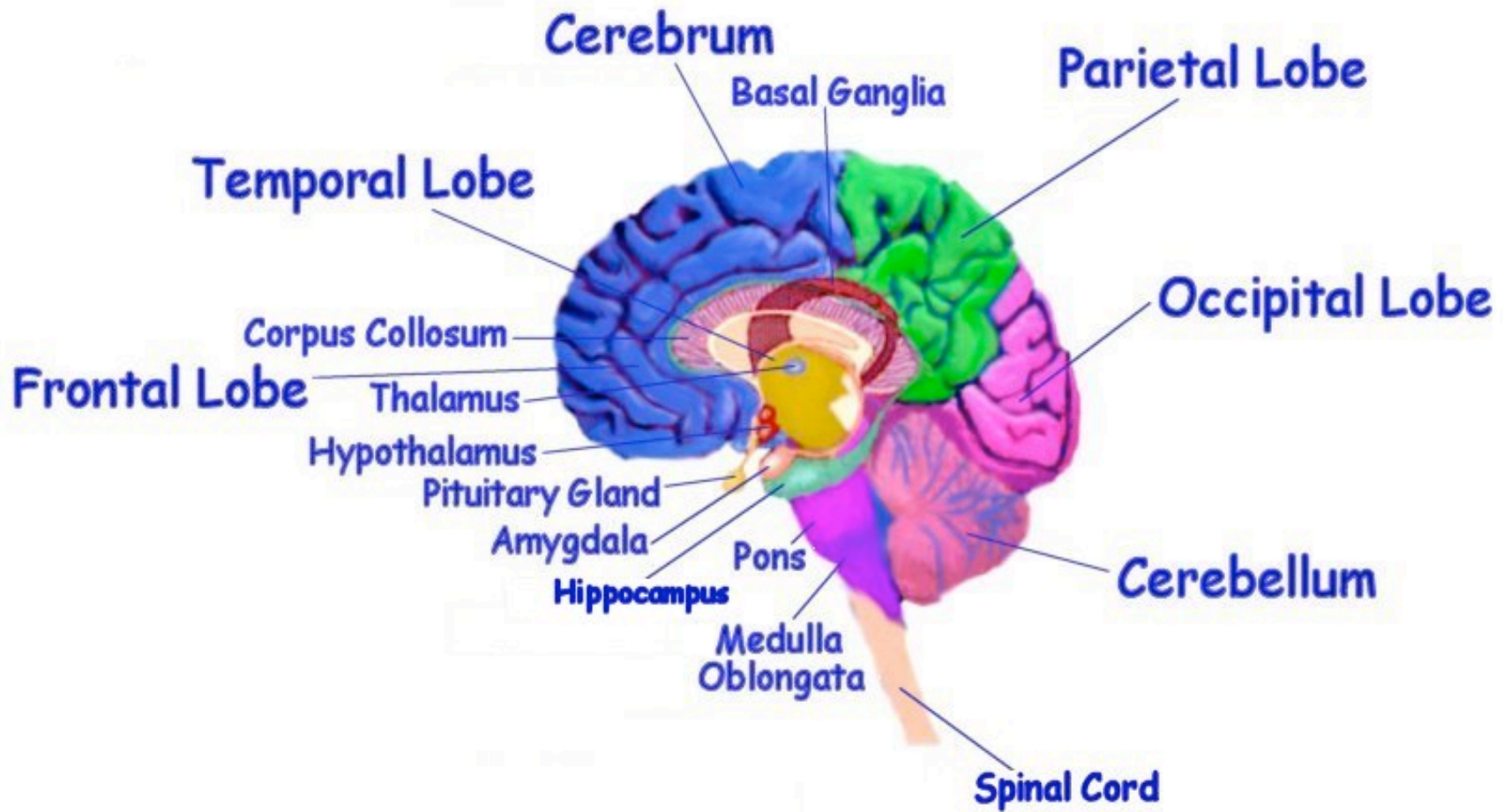


Name _____

Date _____

Brain Boggle



	Name	Function	Disorders/diseases associated with region (where applicable)
A	Cerebrum	<ul style="list-style-type: none"> • Movement (conscious movement that originate within the primary motor cortex) • Sensory processing (receive and process visual, auditory, touch, taste and smell) • Olfaction (smell) • Language and communication (speech happens mainly in the cerebral cortex and there are specific areas of language like Broca and Wernicke) • Learning and memory 	Damage to motor areas of cortex can lead to certain types of motor neuron disease, which results in loss of muscular power and precision rather than total paralysis.
B	Basal Ganglia	Memory, emotions, movement	
C	Parietal Lobe	Senses, motory function	
D	Occipital Lobe	Visual Cortex	
E	Cerebellum	Complex movements (proprioception)	
F	Spinal Cord	<p>The spinal cord functions primarily in the transmission of neural signals between the brain and the rest of the body but also contains neural circuits that can independently control numerous reflexes and central pattern generators.</p> <p>NOTE: Brain stem includes all parts of the brain excluding the cerebrum and cerebellum</p>	Spinal cord injuries have varying severities... prevent signals from being carried to and from the brain. (Trauma, tumor, developmental, etc.)
G	Medulla oblongata	The medulla contains the cardiac, respiratory, vomiting and vasomotor centers and deals with autonomic functions , such as breathing, heart rate and blood pressure . BASIC LIFE SUPPORT (VITAL FUNCTIONS)	
H	Pons “BRIDGE”	Its white matter includes tracts that conduct signals from the cerebrum down to the cerebellum and medulla , and tracts that carry the sensory signals up into the thalamus . The pons contains nuclei that relay signals from the cerebrum to the cerebellum, along with nuclei that deal primarily with sleep, respiration, swallowing, bladder control, hearing, equilibrium, taste, eye movement, facial expressions, facial sensation, and posture . Pons is Latin for bridge.	

I	Hippocampus	It belongs to the limbic system and plays important roles in long-term memory and spatial navigation . EMOTION CREATION	In Alzheimer's disease the hippocampus is one of the first regions of the brain to suffer damage; memory problems and disorientation appear among the first symptoms. Damage to the hippocampus can also result from oxygen starvation (hypoxia), encephalitis, or medial temporal lobe epilepsy. People with extensive hippocampal damage may experience amnesia—the inability to form or retain new memories.
J	Amygdala	“Heart of the Limbic System” Regulates heart beat, visceral activity, emotional response and mood. the amygdalae are considered part of the limbic system	The amygdala appears to play a role in binge drinking, being damaged by repeated episodes of intoxication and withdrawal.[29] Alcoholism is associated with dampened activation in brain networks responsible for emotional processing, including the amygdala.[30] Protein kinase C-epsilon in the amygdala appears to be critical for the development of high ethanol intake

What is the difference between **grey matter** and **white matter**?

In your own words, describe the following systems or anatomical features:

Cerebral Cortex

Lateralization

-Right versus Left brain

Corpus Callosum

-Connects the left and right cerebral hemispheres

Limbic System- Includes olfactory system, amygdalae, and hippocampus

Brain Stem: Mid brain, pons and medulla

In your own words, describe the importance of the following items for the brain:

Blood vessels- Bring vital nutrients and oxygen to the brain

Meninges- protects the Central Nervous System along with the CSF

CSF- (cerebrospinal fluid): cushion for cerebrum and provides mechanical and immunological protection

Skull- Protects brain against injury

L	Hypothalamus	<p>Integrates the Autonomic Nervous System</p> <p>One of the most important functions of the hypothalamus is to link the nervous system to the endocrine system via the pituitary gland. The hypothalamus is responsible for certain metabolic processes and other activities of the Autonomic Nervous System. It synthesizes and secretes neurohormones, which stimulate or inhibit the secretion of pituitary hormones. The hypothalamus controls</p> <ul style="list-style-type: none"> • body temperature • hunger • thirst • fatigue, and • circadian cycles • blood pressure • heart rate <p>Contains neurons that regulate ACTH and TSH secretion (which project to the anterior pituitary),</p> <ul style="list-style-type: none"> • gastric reflexes, maternal behavior, • blood pressure, • feeding, • immune responses, and • temperature <p>The hypothalamus is responsive to:</p> <ul style="list-style-type: none"> • Light: daylength and photoperiod for regulating circadian and seasonal rhythms • Olfactory stimuli, including pheromones • Steroids, including gonadal steroids and corticosteroids • Neurally transmitted information arising in particular from the heart, the stomach, and the reproductive tract • Autonomic inputs • Blood-borne stimuli, including leptin, ghrelin, angiotensin, insulin, pituitary hormones, cytokines, plasma concentrations of glucose and osmolarity etc • Stress • Invading microorganisms by increasing body temperature, resetting the body's thermostat upward. <p>The hypothalamus affects the endocrine system and governs emotional behavior, such as anger and sexual activity.</p>	
M	Thalamus	<p>Cerebral Cortex relay center</p> <p>Its function includes relaying sensation, special sense and motor signals to the cerebral cortex, along with the regulation of consciousness, sleep and alertness. (except smell)</p>	

N	Frontal Lobe	<p>Reasoning/decision making</p> <p>Reaches maturity after the 20's (cognitive maturity associated with adulthood due to increased myelin in the frontal lobe white matter)</p> <p>Contains dopamine-sensitive neurons (reward, attention, long-term memory, planning and drive)</p> <p>Executive functions (higher mental functions)</p> <ul style="list-style-type: none"> • Ability to recognize future consequences • Choose between good and bad actions • Override and suppress unacceptable social responses • Determine similarities and differences between things or events • Retain long-term memories that are not task-based • Modification of emotions to fit socially acceptable norms 	<p>Onset of schizophrenia in early adult years correlates with poorly myelinated connections in frontal lobe.</p>
O	Corpus callosum	<p>Facilitates communication between two hemispheres</p> <p>Super highway</p>	<p>Symptoms of epilepsy can be reduced by cutting the corpus callosum in an operation. There are some other diseases...</p> <ul style="list-style-type: none"> • Alien hand syndrome • Split brain syndrome • Etc.
P	Temporal Lobe	<ul style="list-style-type: none"> • COMMUNICATION • Auditory processing (hearing) • Processing semantics (meaning or connotation) in both speech and vision (like high-level like faces, scenes, object perception and recognition) • Contains the hippocampus and plays a role in forming long-term memories. • Left temporal: low-level perception, comprehension, naming, verbal memory and other language functions. • Sound processing <p>Medial temporal lobes: episodic/declarative memory, transference from short to long term memory, control of spatial memory and behavior</p>	