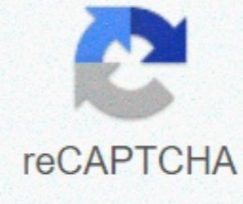




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The language of anatomy worksheet answers

Anatomists and caregivers use terminology that can be confusing for the uninitiated. But the purpose of this language is not to confuse, but rather to increase precision and reduce medical errors. For example, is a scar above the wrist located on the forearm two or three inches away from the hand? Or is it at the base of the hand? Is it on the palm side or the back? By using precise anatomical terminology, we eliminate ambiguity. Anatomical terms are derived from ancient Greek and Latin words. Since these languages are no longer used in everyday conversations, the meaning of their words does not change. Anatomical terms consist of roots, prefixes and suffixes. The root of a term often refers to an organ, tissue or condition, while the prefix or suffix often describes the root. For example, in the disease hypertension, the prefix hyper- means high or above, and the rootorit voltage refers to pressure, so the word hypertension refers to abnormally high blood pressure. Anatomical position To further increase precision, anatomist standardizes the way they look at the body. Just as maps are normally oriented with the north at the top, the standard body is map, or anatomical position, as of the body stands upright, with the feet on the shoulder width and parallel, toes forward. The upper extremities are held out to each side, and the palms face forward as illustrated in Figure 1.12. Using this default position reduces confusion. It does not matter how the body described is oriented, the terms are used as if it is in an anatomical position. For example, a scar in the anterior (anterior) carpal (wrist) region would be present on the palm side of the wrist. The term front would be used even if the hand was palm down on a table. Figure 1.12. Regions of the human body The human body appears in an anatomical position in an (a) anterior view and a (b) posterior view. The regions of the body are noticed in boldface. A body lying down is described as either prone or supine. Prone describes an orientation face down and supine describes an orientation face up. These terms are sometimes used to describe the position of the body during specific physical examinations or surgical procedures. Regional terms The many regions of the human body have specific terms to help increase precision (see Figure 1.12). Note that the term brachium or arm is reserved for the upper arm and antebrachium or forearm is used rather than the forearm. Similarly, the femur or thigh is correct, and the bone or crus are reserved for the part of the lower limb between the knee and ankle. You will be able to describe the regions of the body using the terms from the figure. Directional terms Some directionanatomical terms are displayed and any other textbook for anatomy (Figure 1.13). These terms are necessary to describe the relative locations of different body structures. For example, an anatomist can describe a band of tissue that is inferior to another or a doctor can describe a tumor as superficial to a deeper body structure. Commit these terms to memory to avoid confusion when studying or describing the locations of certain body parts. Front (or ventral) Describes the front or direction towards the front of the body. The toes are front to the foot. Posterior (or dorsal) Describes the back or direction towards the back of the body. The popliteus is posterior to the patella. Superior (or cranial) describes a position above or higher than another part of the body correctly. The orbits are superior to the oris. Inferior (or caudal) describes a position below or lower than another part of the body correctly; near or against the tail (in humans, the coccyx, or the lowest part of the spine). The pelvis is worse than the abdomen. Lateral describes the side or direction towards the side of the body. The thumb (pollex) is lateral to the numbers. Medial describes the middle or direction towards the center of the body. Halluxen is the medial toe. Proximal describes a position in a limb that is closer to the point of attachment or trunk in the body. The brachium is proximal to the antebrachium. Distal describes a position in a limb that is farther from the point of attachment or trunk of the body. Crus is distal to the femur. Superficial describes a position closer to the surface of the body. The skin is superficial to the legs. Deep describes a position further from the surface of the body. The brain is deep to the skull. Figure 1.13. Direction conditions Applied to the human body-paired direction conditions are shown as applied to the human body. Body Planes A-section is a two-dimensional surface of a three-dimensional structure that has been cut. Modern medical imaging devices allow clinicians to obtain virtual sections of living bodies. We call these scans. Body sections and scans can be interpreted correctly, however, only if the viewer understands the plane along which section was made. A plane is an imaginary two-dimensional surface that passes through the body. There are three planes commonly referred to in anatomy and medicine, as illustrated in Figure 1.14. The sagittal plane is the plane that divides the body or an organ vertically on the right and left sides. If this vertical plane goes directly down the center of the body, it is called midsagittal or median plane. If it divides the body into unequal right and left sides, it is called a parasagittal plan or less commonly a longitudinal section. The frontal plane is the plane that divides the body or an organ in a front portion and a rear (rear) portion. The frontal plane is often called a coronal plane. (Corona is Latin for crown.) The transverse plane is the plane that divides the body or organ horizontally in the upper and lower parts. Transverse planes produce images called cross sections. Figure 1.14. Plane of the body The three planes most commonly used in anatomical and medical imaging are sagittal, frontal (or coronal), and transverse plane. Body cavities and serous membranes the body maintains its internal organization using membranes, almonds, and other structures that separate compartments. The back (posterior) cavity and ventral (anterior) cavity are the largest body compartments (Figure 1.15). These cavities contain and protect sensitive internal organs, and the ventral cavity allows for significant changes in the size and shape of the organs when performing their functions. Lungs, heart, stomach, and intestines, for example, can expand and contract without distorting other tissues or disrupting the activity of nearby organs. Figure 1.15. Dorsal and Ventral body cavities The ventral cavity includes the thoracic and abdominopelvic cavities and their subdivisions. The dorsal cavity includes the cranial cavity and spinal cavities. Subdivisions of the Posterior (Dorsal) and Anterior (Ventral) Cavities The posterior (dorsal) and anterior (ventral) cavities are each divided into smaller cavities. In the posterior (dorsal) cavity, the cranial cavity houses the brain, and the spinal cavity (or vertebral cavity) encloses the spinal cord. Just as the brain and spinal cord form a continuous, uninterrupted structure, the cranial and spinal cavities that accommodate them are also continuous. The brain and spinal cord are protected by the bones of the skull and vertebral column and by the cerebrospinal fluid, a colorless fluid produced by the brain, which suppresses the brain and spinal cord within the posterior (dorsal) cavity. The anterior (ventral) cavity has two main divisions: the thoracic cavity and the abdominopelvic cavity (see Figure 1.15). The thoracic cavity is the more superior division of the anterior cavity, and it is enclosed by the thorax. The thoracic cavity contains the lungs and heart, which is located in the mediastinum. The membrane forms the floor of the thoracic cavity and separates it from the more inferior abdominopelvic cavity. The abdominopelvic cavity is the largest cavity in the body. Although no membrane physically divides the abdominopelvic cavity, it may be useful to distinguish between the abdominal cavity, the division that houses the digestive organs, and the pelvic cavity, the division that houses the organs for reproduction. Abdominal regions and quadrants To promote clear communication, for example, about the location of a patient's abdominal pain or a mass, caregivers usually divide the cavity into either nine regions or four quadrants (Figure 1.16). Figure 1.16. Regions and quadrants of the peritoneal cavity There are (a) nine abdominal regions and (b) four abdominal quadrants in the abdominal cavity. The more detailed regional method subdivides the cavity with a horizontal line immediately inferior to the ribs and an immediately superior pelvis, and two vertical lines drawn as if dropped from the midpoint of each clavicle (clavicle). There are nine resulting regions. The simpler quadrant approach, which is more common in medicine, subdivides the cavity with a horizontal and a vertical line that intersects at the patient's umbilicus (navel). Watch these lectures from Wendy Riggs to learn more about Directional Terminology and Planes of Section. 2 WITH FINGERS7K. ORAL D. CERVICAL O. THORACIC A. BELLY B. ANTECUBITAL, P. UMBILICAL M. SHY F. FEMORAL G. FIBULAR E. CRURAL8J. OCCIPITAL C. BRACHIAL I. LUMBAR H. GLUTEAL L. POPLITEAL N. SURAL9CLASSIFY EACH OF THE TERMS IN CENTRAL IN QUESTION 2 ABOVE IN ONE OF THE LARGE BODY REGIONS LISTED BELOW. INSERT THE APPROPRIATE KEY LETTERS ON THE ANSWER PLOTS. 1. APPENDICULAR B. ANTECUBITAL C. BRACHIAL E. CRURAL F. FEMORAL G. FIBULAR H. GLUTEAL L. POPLITEAL M. SHYNESS N. SURAL10CLASSIFY ALL OF THE NAMES IN THE KEY OF QUESTION 2 ABOVE INTO ONE OF THE LARGE BODY REGIONS LISTED BELOW. INSERT THE APPROPRIATE KEY LETTERS ON THE ANSWER PLOTS. 2. AXIAL A. ABDOMINAL D. CERVICAL I. LUMBAR SPINE J. OCCIPITAL K. ORAL O. THORAX P. UMBILICAL11DESCRIBE COMPLETELY THE STANDARD HUMAN ANATOMICAL POSITION. In the ANATOMICAL POSITION OF THE HUMAN BODY IS UPRIGHT, WITH THE FEET ONLY SLIGHTLY APART, HEAD AND TOES POINTED FORWARD, AND ARMS HANGING IN THE SIDES WITH PALMS FACING FORWARD. A CUT, A PART OF THE BODY OR ORGANS THAT IS CUT TO BE ABLE TO OBSERVE/STUDY IT WITHOUT INCLUDING SURROUNDING AREAS.13In anatomical position is the face and palms of (1) body surface; buttocks and shoulder blades are on (2) body surface; and the top of the head is the most (3) part of the body. The ears are (4) and (5) to the shoulders and (6) to the nose. The heart is (7) to the vertebral column (spine) and (8) to the lungs. The elbow is (9) to the fingers but (10) to the shoulder. The abdominopelvic cavity is (11) to the thoracic cavity and (12) to the spinal cavity. In humans, the back surface can also be called (13) the surface; however, in four-legged animals, the back surface (14) is the surface.1. ANTERIOR 2. REAR 3. SUPERIOR 4. SUPERIOR 5. MEDIAL 6. LATERAL 7. ANTERIOR 8. MEDIAL 9. PROXIMAL 10. DISTAL 11. INFERIOR 12. ANTERIOR 13. REAR 14. SUPERIOR14If an incision cuts the heart in the right and left parts, the section is one (15) section; if the heart is cut so that superior and inferior portions result, the section is one (16) section. You are told to cut a dissection animal along two levels so that the kidneys are observable in both sections. The two sections that will always meet this requirement are sections (17) and (18). A section showing the continuity between the spinal and cranial is one (19) section.15. SAGITTAL 16. Transverse 17. FRONTAL 18. SAGITTAL 19. FRONTAL15CORRECT EACH OF THE BODY PLAN BY INSERTING THE APPROPRIATE TERM FOR EACH ON THE RESPONSE LINE DURING THE DRAWING. MEDIAN (MIDSAGITTAL) PLANE16CORK IDENTIFY EACH OF THE BODY PLAN BY INSERTING THE APPROPRIATE TERM FOR EACH ON THE RESPONSE LINE BELOW THE DRAWING.17CORK IDENTIFY EACH OF THE BODY PLAN BY INSERTING THE APPROPRIATE TERM FOR EACH ON THE RESPONSE LINE BELOW THE DRAWING.18. EPIGASTRIC REGION B. RIGHT HYPOCHONDRIAC REGION C. LEFT HYPOCHONDRIAC REGION D. UMBILICAL REGION E. RIGHT LUMBAR REGION F. LEFT LUMBAR REGION G. HYPOGASTRIC (SHY) REGION H. RIGHT ILIAC (INGUINAL) REGION I. LEFT ILIAC (INGUINAL) REGION20Which body cavity would need to be opened for the following types of surgery or procedures? surgery to remove a cancerous pulmonary lobe21Which body cavity would need to be opened for the following types of surgery or procedures? appendicitis22Which body cavity would need to be opened for the following types of surgery or procedures? removal of the uterus, or uterus23What body cavity would need to be opened for the following types of surgery or procedures? stomach ulcer surgery24Which body cavity would need to be opened for the following types of surgery or procedures? removal of a brain tumor25Which body cavity would need to be opened for the following types of surgery or procedures? delivery of preoperative saddle anesthesia26Name the muscle that subdivides the ventral body cavity.27Which organ system would not be represented in any of the body cavities?28What are the bony landmarks of the abdominopelvic cavity?29Which body cavity provides the least protection to its internal structures?30What is the function of the body's serous membrane? THESE MEMBRANES PRODUCE A THIN LUBRICATING FLUID THAT ALLOWS VISCERAL BODIES TO SLIDE OVER EACH OTHER OR TO RUB AGAINST HE BODY WALL WITH MINIMAL FRICTION. ALSO TO COMPARTMENTALIZE THE VARIOUS ORGANS SO THAT INFECTION OF AN ORGAN IS PREVENTED FROM SPREADING TO OTHERS.31Use the main choices, identify the small body cavities described below. keeping your eyes in an anterior-facing position32Use the main choices, identify the small body cavities described below. contains the tongue33Use the main choices, identify the small body cavities described below. lines a common cavity34Use the main choices, identify the small Below. House three small bones involved in hearing35Use the main choices, identify the small body cavities described below. located within the nose36On the incomplete flowchart listed below: • Fill in the cavity names as appropriate for each box.37Dr. using either the name of the cavity or the box numbers, identify the descriptions in the following list. a. contained within the skull and vertebral column b. contains female reproductive organs c. the most protective body cavity d. its name means belly1 - a. which is located in the skull and vertebral column 8 - b. contains female reproductive organs 4 - c. the most protective body cavity 7 - d. its name means belly38There, using either the name of the cavity or the box number , identify the descriptions in the list that follows. e. contains the heart f. contains the small intestine g. delimited by the ribs h. its walls are muscular5 - e. contains the heart 6 & 7 - f. contains the small intestine 5 - g. bounded by the ribs 6 & 7 - h. its walls are muscular muscular