

***Human Anatomy 2024 Release 1st edition McKinley
Test Bank***

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Corret Answers are located at the end of each chapter.

TRUE/FALSE - Write 'T' if the statement is true and 'F' if the statement is false.

- 1) The right and left hypochondriac regions are lateral to the hypogastric region.
 - ☐ true
 - ☐ false

- 2) A bone contains nervous, connective, and epithelial tissue. Therefore, it is classified as an organ.
 - ☐ true
 - ☐ false

- 3) Surgical anatomy refers to the study of anatomic landmarks used before and after surgery.
 - ☐ true
 - ☐ false

- 4) The fact that the structures of cells vary widely reflects the specializations needed for their different functions.
 - ☐ true
 - ☐ false

- 5) Organs contain two or more tissues that work together to perform specific, complex functions.
 - ☐ true
 - ☐ false

- 6) The cell is the smallest living portion of the human body.
 - ☐ true
 - ☐ false

- 7) Fortunately for science, there is but one single property that defines life.
 - ☐ true
 - ☐ false

- 8) The urinary system filters the blood, concentrates waste products, and removes waste products from the body.
- ☐ true
 - ☐ false
- 9) The urinary system filters the blood, concentrates waste products, and removes waste products from the body.
- ☐ true
 - ☐ false
- 10) The anatomic position allows all observers to have a common point of reference.
- ☐ true
 - ☐ false
- 11) A coronal plane is a vertical plane that divides the body into anterior and posterior parts.
- ☐ true
 - ☐ false
- 12) A sagittal plane is a vertical line that divides the body into right and left parts.
- ☐ true
 - ☐ false
- 13) The chest is superior to the head.
- ☐ true
 - ☐ false
- 14) The antecubital region is proximal to the carpal region.
- ☐ true
 - ☐ false

- 15) The mediastinum is a serous cavity.
- ☐ true
 - ☐ false
- 16) There is a physical barrier that separates the abdominal cavity from the pelvic cavity.
- ☐ true
 - ☐ false
- 17) The right and left iliac regions are found lateral to the hypogastric region.
- ☐ true
 - ☐ false
- 18) The lumbar regions are located lateral to the umbilical region.
- ☐ true
 - ☐ false
- 19) The lumbar regions are located lateral to the umbilical region.
- ☐ true
 - ☐ false

MULTIPLE CHOICE - Choose the one alternative that best completes the statement or answers the question.

- 20) The early anatomist who stressed the importance of experimentation in medicine and became known as the "Prince of Physicians" was
- A) Galen.
 - B) Vesalius.
 - C) Pelops.
 - D) Leonardo da Vinci.
 - E) Herophilus.

- 21) The artist who used dissections to improve his drawings and paintings was
- A) Vesalius.
 - B) Galen.
 - C) Da Vinci.
 - D) Hippocrates.
- 22) Anatomy is the study of
- A) function.
 - B) structure.
- 23) The scientific discipline that studies the function of body structures is
- A) anatomy.
 - B) physiology.
- 24) Gross anatomy refers to the study of
- A) cells.
 - B) structures formed by cells.
 - C) structures not visible to the unaided eye.
 - D) structures visible to the unaided eye.
- 25) The anatomic changes that result from disease are studied under
- A) pathologic anatomy.
 - B) systemic anatomy.
 - C) histology.
 - D) surgical anatomy.
 - E) developmental anatomy.
- 26) Molecules are formed from two or more
- A) electrons.
 - B) organs.
 - C) atoms.
 - D) tissues.
 - E) systems.

- 27) Which organizational level consists of related organs that work to achieve a common function?
- A) Organ system level
 - B) Cellular level
 - C) Tissue level
 - D) Chemical level
 - E) Organ level
- 28) At what level of organization is a tooth?
- A) Tissue level
 - B) Cell level
 - C) Organ level
 - D) System level
 - E) Atomic level
- 29) The term that refers to the ability of organisms to respond to a stimulus is
- A) responsiveness.
 - B) reproduction.
 - C) metabolism.
 - D) development.
 - E) organization.
- 30) The smallest structural unit that exhibits the characteristics of living things is
- A) an organ.
 - B) an individual.
 - C) tissue.
 - D) a cell.
 - E) a system.

- 31) One of the characteristics of living things is _____, which causes changes in structures, processes, or traits that increase expected long-term reproductive success.
- A) homeostasis
 - B) adaptation
 - C) regulation
 - D) responsiveness
 - E) development
- 32) The various chemical reactions that organisms carry out are collectively called
- A) metabolism.
 - B) homeostasis.
 - C) reproduction.
 - D) responsiveness.
 - E) development.
- 33) The system responsible for providing protection, regulating body temperature, and being the site of cutaneous receptors is the _____ system.
- A) respiratory
 - B) muscular
 - C) integumentary
 - D) urinary
 - E) nervous
- 34) The body system that provides support and protection as well as being a site of blood cell production (hemopoiesis) is the _____ system.
- A) skeletal
 - B) muscular
 - C) cardiovascular
 - D) respiratory
 - E) lymphatic

- 35) The system responsible for the exchange of gases between the blood and atmospheric air is the _____ system.
- A) urinary
 - B) respiratory
 - C) cardiovascular
 - D) endocrine
 - E) nervous
- 36) Which describes the anatomic position?
- A) The body is upright.
 - B) Palms are facing forward.
 - C) Thumbs point away from the body.
 - D) Feet are flat on the floor.
 - E) All of the choices are correct.
- 37) The word _____ implies an imaginary flat surface passing through the body.
- A) section
 - B) plane
 - C) direction
 - D) tangent
 - E) figure
- 38) A plane that passes through the structure at an angle is called
- A) frontal.
 - B) coronal.
 - C) oblique.
 - D) sagittal.
 - E) transverse.
- 39) A _____ plane cuts perpendicularly along the long axis of the body or organ.
- A) transverse
 - B) oblique
 - C) sagittal
 - D) coronal
 - E) frontal

- 40) Which best defines "superficial"?
- A) On the inside
 - B) On the outside
 - C) Toward the end of an appendage
 - D) Close to the attachment of the appendage to the trunk
 - E) At the head end
- 41) The directional term that means "away from the midline of the body" is
- A) inferior.
 - B) superior.
 - C) medial.
 - D) lateral.
 - E) caudal.
- 42) The directional term that means "closest to the point of attachment to the trunk" is
- A) distal.
 - B) proximal.
 - C) medial.
 - D) cephalic.
 - E) dorsal.
- 43) The directional term that means "in back of or toward the back surface" is
- A) posterior.
 - B) caudal.
 - C) cephalic.
 - D) anterior.
 - E) proximal.
- 44) The best term for referring to the rear or tail end is
- A) caudal.
 - B) cephalic.
 - C) inferior.
 - D) superior.
 - E) lateral.

- 45) The head, neck, and trunk make up the _____ region of the body.
- A) caudal
 - B) thoracic
 - C) appendicular
 - D) axial
 - E) cephalic
- 46) The posterior aspect of the body has _____ enclosed cavities.
- A) 1
 - B) 2
 - C) 3
 - D) 4
 - E) 5
- 47) The cranial cavity houses the
- A) eyeball.
 - B) ear canals.
 - C) brain.
 - D) spinal cord.
 - E) nasal structures.
- 48) The bones of the vertebral column form a cavity called the
- A) nervous system passageway.
 - B) abdominal cavity.
 - C) spinal cavity.
 - D) vertebral canal.
 - E) None of the choices are correct.
- 49) The axillary region is _____ to the pectoral region.
- A) lateral
 - B) medial
 - C) distal
 - D) proximal
 - E) inferior

- 50) The anatomic term for the cheek is
- A) buccal.
 - B) pelvic.
 - C) cervical.
 - D) crural.
 - E) sacral.
- 51) The best view of the popliteal region is seen from the
- A) anterior.
 - B) lateral.
 - C) superior.
 - D) inferior.
 - E) posterior.
- 52) The anatomic term for the foot is
- A) pubic.
 - B) patellar.
 - C) pes.
 - D) popliteal.
 - E) acromial.
- 53) The anatomic term for the wrist region is
- A) tarsal.
 - B) carpal.
 - C) digital.
 - D) olecranal.
 - E) perineal.
- 54) One can best see the dorsum of the manus from a/an _____ view.
- A) lateral
 - B) superior
 - C) inferior
 - D) posterior
 - E) anterior

- 55) The primary function of serous fluid is
- A) to minimize friction.
 - B) a stabilizing force.
 - C) insulation.
 - D) energy storage.
 - E) to provide an attachment surface.
- 56) The anatomic term for the calf is
- A) crural.
 - B) popliteal.
 - C) tarsal.
 - D) carpal.
 - E) sural.
- 57) The term "hallux" refers to the
- A) little finger.
 - B) thumb.
 - C) great toe.
 - D) lateral-most toe.
 - E) middle digit.
- 58) The anatomic term for the hip region is
- A) sternal.
 - B) coxal.
 - C) dorsal.
 - D) crural.
 - E) sural.
- 59) A piercing in the umbilical region would be found on the
- A) curve of the ear.
 - B) lip.
 - C) ear lobe.
 - D) navel.
 - E) eyebrow.

- 60) A professional fighter hit in the mental region might have damage to the
- A) jaw.
 - B) ear.
 - C) nose.
 - D) knee.
 - E) shoulder.
- 61) Pollex refers to the
- A) eyebrow.
 - B) thumb.
 - C) great toe.
 - D) little finger.
 - E) kneecap.
- 62) A digit may refer to
- A) a finger.
 - B) the nose.
 - C) a toe.
 - D) the entire arm.
 - E) a finger or toe.
- 63) An inguinal hernia is in the region of the
- A) loin.
 - B) groin.
 - C) calf.
 - D) thigh.
 - E) shoulder.
- 64) Which is a physiological description rather than an anatomical one?
- A) The muscles of the intestinal wall contract slowly and involuntarily.
 - B) The walls of blood capillaries are composed of a thin epithelium.
 - C) The muscles of the thigh are composed of skeletal muscle tissue.
 - D) There are fenestrations (openings) between the epithelial cells in capillary walls.
 - E) The esophageal wall includes a middle layer of dense irregular connective tissue.

65) Which serous membrane covers the external surface of an organ?

- A) The parietal layer
- B) The visceral layer
- C) The muscle layer
- D) The dorsal layer
- E) The ventral layer

66) The limbs of the body are attached to the axis and make up the

- A) abdominal region.
- B) thoracic region.
- C) axial region.
- D) appendicular region.
- E) antebrachial region.

67) The median space in the thoracic cavity is called the

- A) pleural cavity.
- B) pericardial cavity.
- C) mediastinum.
- D) peritoneal cavity.
- E) pericardium.

68) Which is *not* found in the mediastinum?

- A) Heart
- B) Pancreas
- C) Thymus
- D) Trachea
- E) Esophagus

69) The pericardium is a two-layered serous membrane that

- A) encloses the heart.
- B) encloses the kidney.
- C) encloses a lung.
- D) provides lubrication for the knee.
- E) covers the small intestine.

- 70) With a specimen in the anatomic position, you can best see the mediastinum with a/an_____ view.
- A) midsagittal
 - B) superior
 - C) inferior
 - D) anterior
 - E) posterior
- 71) Which abdominopelvic region is directly superior to the umbilical region?
- A) Lumbar
 - B) Iliac
 - C) Epigastric
 - D) Hypogastric
 - E) Hypochondriac
- 72) The abdominopelvic cavity is commonly divided into_____ smaller imaginary compartments or regions.
- A) 6
 - B) 15
 - C) 8
 - D) 9
 - E) 18
- 73) The moist, two-layered serous membrane that lines the abdominopelvic cavity is called the
- A) peritoneum.
 - B) diaphragm.
 - C) synovium.
 - D) pleura.
 - E) pericardium.

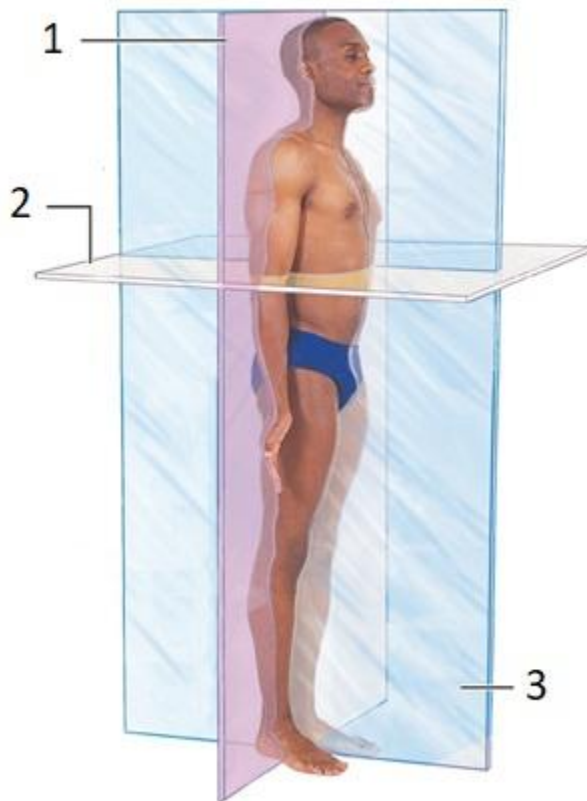
- 74) Of the abdominopelvic regions, the one that is the superior of the middle column is called the
- A) lumbar.
 - B) umbilical.
 - C) epigastric.
 - D) hypogastric.
 - E) hypochondriac.
- 75) Which abdominopelvic regions have both a right and left side?
- A) Lumbar and iliac
 - B) Hypogastric and hypochondriac
 - C) Hypochondriac, lumbar, and hypogastric
 - D) Iliac and hypochondriac
 - E) Lumbar, iliac, and hypochondriac
- 76) What is another term for the iliac regions?
- A) Inguinal regions
 - B) Lumbar regions
 - C) Hypochondriac regions
 - D) Epigastric regions
 - E) Hypogastric regions
- 77) Lateral to the umbilical abdominopelvic region are the _____ regions.
- A) hypochondriac
 - B) iliac
 - C) epigastric
 - D) hypogastric
 - E) lumbar
- 78) The urinary bladder is found in which abdominopelvic region?
- A) Hypogastric
 - B) Right lumbar
 - C) Umbilical
 - D) Left iliac
 - E) Left lumbar

- 79) The gall bladder is typically found in the _____ region of the abdominopelvic cavity.
- A) umbilical
 - B) right lumbar
 - C) right hypochondriac
 - D) left hypochondriac
 - E) hypogastric
- 80) The abdominopelvic quadrants are formed by passing one horizontal and one vertical line through the
- A) patellar region.
 - B) umbilicus.
 - C) antebrachial region.
 - D) gluteal region.
 - E) crural region.
- 81) Which branch of microscopic anatomy is the study of tissues?
- A) Histology
 - B) Cytology
 - C) Embryology
 - D) Developmental anatomy
 - E) Surgical anatomy
- 82) Which branch of anatomy specifically examines developmental changes prior to birth?
- A) Developmental anatomy
 - B) Regional anatomy
 - C) Embryology
 - D) Systemic anatomy
 - E) Pathologic anatomy
- 83) Which abdominopelvic regions are directly inferior to the cartilage attached to the ribs?
- A) Umbilical regions
 - B) Lumbar regions
 - C) Hypochondriac regions
 - D) Iliac regions
 - E) Hypogastric regions

84) _____ anatomy examines both superficial anatomic markings and internal body structures as they relate to the skin covering them.

- A) Regional
- B) Surface
- C) Radiographic
- D) Surgical
- E) Systemic

85) Which number corresponds to a sagittal plane?



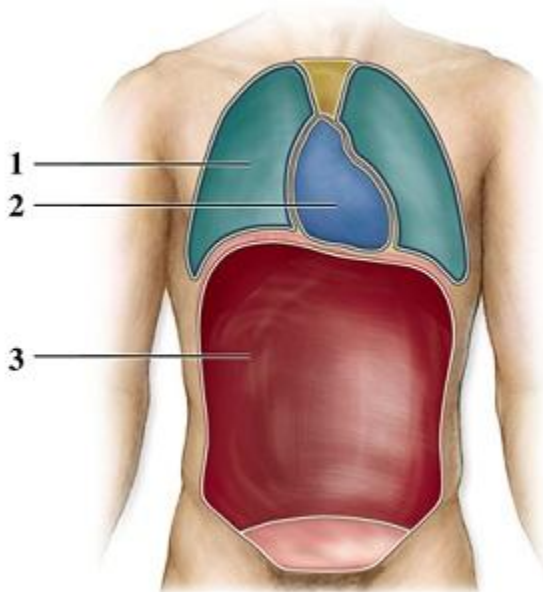
(c)McGraw-Hill Education/Joe DeGrandis, photographer

- A) 1
- B) 2
- C) 3
- D) None of the choices are correct.

86) Which number corresponds to a body cavity lined by serous membranes?

- A) 1
- B) 2 and 3
- C) 3
- D) 1, 2, and 3
- E) 1 and 3

87) Which number corresponds to a ventral body cavity?

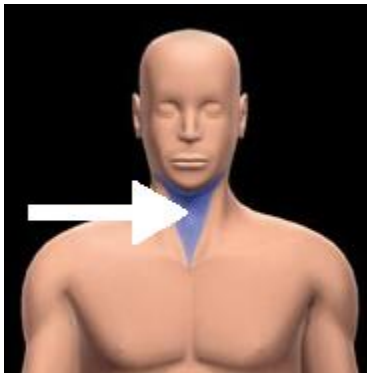


- A) 1
- B) 2
- C) 3
- D) 1 and 2
- E) 1, 2, and 3

88) Which number corresponds to the visceral layer of a serous membrane?

- A) 1
- B) 2
- C) 3
- D) None of the choices are correct.
- E) All of the choices are correct.

- 89) A clinician makes a diagnosis before observing a patient's symptoms and completing a physical examination. This is the incorrect order of steps when following the scientific method. Which of the following describes how the process should have proceeded?
- A) Collection of data comes before diagnosis.
 - B) Formation of a hypothesis comes after diagnosis.
 - C) Observation of symptoms comes after collection of data.
 - D) Formation of a hypothesis comes before observation of symptoms.
- 90) A physician orders a CT scan for a patient. Which step of the scientific method does this represent?
- A) Collection of data
 - B) Formation of a hypothesis
 - C) Observation of symptoms
 - D) Diagnosis
- 91) The highlighted area is a portion of which body region?



- A) Thoracic
 - B) Cervical
 - C) Vertebral
 - D) Cranial
- 92) What direction is indicated in the image?%media:aadtralmtdtrdsuperior_jpg.ext%
- A) Caudal
 - B) Superior
 - C) Inferior
 - D) Proximal

93) What is the name of the highlighted membrane?%media:aapetmsapetpetparietalperitoneum-alt_jpg.ext%

- A) Parietal peritoneum
- B) Visceral pericardium
- C) Parietal pleura
- D) None of the choices are correct.

94) What is the name of the highlighted body plane?%media:aaplsanlplsplstransverseplane_jpg.ext%

- A) Transverse
- B) Sagittal
- C) Oblique
- D) Coronal

95) What organ system are the highlighted organs part of?%media:osyantokyurikidney_jpg.ext%

- A) Endocrine
- B) Lymphatic
- C) Digestive
- D) Urinary

FILL IN THE BLANK. Write the word or phrase that best completes each statement or answers the question.

96) The work of Greek scientist _____, who was the first to publicly dissect and compare human and animal bodies, greatly influenced Galen, the "Prince of Physicians."

97) The level of organization one step more complex than the organ level is the _____ level.

98) The state of equilibrium, or constant internal environment, in the body is called _____.

99) The _____ system produces movement and generates heat when its parts contract.

- 100) The human organ system where the primary hormone is testosterone is the _____ reproductive system.
- 101) Gonads produce gametes in the _____ system.
- 102) The _____ reproductive system produces oocytes.
- 103) The _____ system produces vitamin D, prevents water loss, and helps regulate body temperature.
- 104) The antecubital region is _____ to the brachial region.
- 105) The muscular partition that separates the thoracic and abdominopelvic cavities is the _____.
- 106) The hypogastric region is located _____ to the right iliac region.
- 107) The practice of using cross-sections of frozen cadavers developed in the 1900s. This field of study is called _____.
- 108) The preservation method where reactive polymers are embedded in each body cell is called _____.

Answer Key

Test name: CH-01

- 1) FALSE
- 2) TRUE
- 3) TRUE
- 4) TRUE
- 5) TRUE
- 6) TRUE
- 7) FALSE
- 8) TRUE
- 9) TRUE
- 10) TRUE
- 11) TRUE
- 12) TRUE
- 13) FALSE
- 14) TRUE
- 15) FALSE
- 16) FALSE
- 17) TRUE
- 18) TRUE
- 19) TRUE
- 20) A
- 21) C
- 22) B
- 23) B
- 24) D
- 25) A
- 26) C
- 27) A
- 28) C
- 29) A
- 30) D
- 31) B
- 32) A
- 33) C
- 34) A
- 35) B
- 36) E
- 37) B

- 38) C
- 39) A
- 40) B
- 41) D
- 42) B
- 43) A
- 44) A
- 45) D
- 46) B
- 47) C
- 48) D
- 49) A
- 50) A
- 51) E
- 52) C
- 53) B
- 54) D
- 55) A
- 56) E
- 57) C
- 58) B
- 59) D
- 60) A
- 61) B
- 62) E
- 63) B
- 64) A
- 65) B
- 66) D
- 67) C
- 68) B
- 69) A
- 70) D
- 71) C
- 72) D
- 73) A
- 74) C
- 75) E
- 76) A
- 77) E

- 78) A
- 79) C
- 80) B
- 81) A
- 82) C
- 83) C
- 84) B
- 85) C
- 86) B
- 87) E
- 88) A
- 89) A
- 90) A
- 91) B
- 92) B
- 93) A
- 94) A
- 95) D
- 96) Herophilus
- 97) organ system
- 98) homeostasis
- 99) muscular
- 100) male
- 101) reproductive
- 102) female
- 103) integumentary
- 104) distal
- 105) diaphragm
- 106) medial
- 107) cryotechnology
- 108) plastination

CHAPTER 1: A FIRST LOOK AT ANATOMY

CHAPTER OVERVIEW

This chapter is designed to help students get excited about learning anatomy. It also will help get them oriented to the body and alleviate some of the fears associated with the extensive terminology. The chapter begins with a brief history of human anatomy and a discussion of the scientific method. The differences between microscopic and gross anatomy are presented. The chapter distinguishes between anatomy and physiology and demonstrates the complementarities of structure and function and homeostasis. Chapter 1 also presents the human body as a whole organism. The body plan and basic anatomical terminology are presented, including anatomical position, directional terms, body regions, and planes of section. The major body cavities, their contents, and the serous membranes associated with each are described.

Chapter 1 is an important foundation for further understanding of the details of anatomy. Learning the general structure of the body will lead to a more complete comprehension of individual structures. The most challenging part of Chapter 1 is for the student to not become overwhelmed by all the terms, which seem like a foreign language to many. It is important to establish the significance of anatomical terminology early in the course; students need to understand that they can be successful in anatomy only if they master the terminology. The information regarding anatomical position, directional terms, body regions, and planes of section are very important for the students to learn and understand. This will make further studies much easier for them to assimilate.

KEY POINTS TO EMPHASIZE WHEN GETTING STARTED IN ANATOMY

1. This is the best time to get students excited about the human body. Many are taking the course because it is a requirement; breaking through the barriers is not always easy.
 - a. A good way to start is to demonstrate to the students that they already know quite a few structures of the human body.
 - i. Many students work out at a gym and know several of the muscle groups of the body: the abdominals (abs), biceps, quadriceps (quads), hamstrings, deltoid, rotator cuff, and so on. They do not know the individual muscles, but they can use their existing awareness to augment the learning experience in anatomy.
 - ii. They are also familiar with many of the structures of the digestive tract.
 - iii. They often think they know “everything” about the reproductive system. Even though they do not, this “knowledge” can be used to ease their stress levels when beginning this class.
 - b. Explain that anatomy (along with physiology) is the foundation of our daily lives. We make decisions about our eating habits and we evaluate information that we are inundated with by TV, the internet, and magazines. Understanding how structures in the body are put together and how they work in everyday instances

is useful in showing the importance of anatomy (and physiology).

- c. Every chance you get, it is best to relate the anatomy topic to something that students see or hear and are immediately concerned about. For example, when explaining the anatomical quadrants, relate appendicitis, gallstones, stomachache, menstrual cramps, and so on, to each quadrant to make this topic more realistic.
2. When describing the anatomic position, spend some time explaining terms that relate to it: sagittal plane, transverse plane, midline of body and appendages. Students can get confused easily when dealing with even simple terms like *lateral* and *medial* when related to the midline of an appendage.
3. If using the cat or another four-legged animal in the lab, be sure to explain that terms like *dorsal/ventral*, *anterior/posterior*, and *superior/inferior* refer to different body regions for humans versus the cat (four-legged animals). Also, remind the class that more than one anatomical term can be used correctly to describe the position of a structure.
4. Explain the origins of terms (using their Greek and Latin roots) as much as possible. You can show that the anatomical term *manus* means “hand” by relating it to “manual.” “Pelvic” is derived from the root *pelv-*, which means “basin.” So, the pelvic cavity is a basin-shaped cavity enclosed by the pelvic bones. Anatomy is derived from the prefix *ana-*, which means “up” and the root—*tom-*, which means “something cut.” So, anatomy is an observational science in which anatomists dissect or “cut up” so as to view internal structures of a specimen, and so on. Remind students that the root origins and pronunciation of virtually all new terms are given in the textbook.
5. The human body is organized on various levels. Each of these levels builds on the other(s) to make up an organism. For example, cells make up tissues, tissues make up organs, organs make up organ systems, and organ systems work together to constitute an organism. Understanding this concept is important in understanding how the different parts and systems of the body work together to form one organism. Likewise, emphasize the textbook chapters are organized based on the various levels of organization. The authors take a reductionist approach to organizing the textbook, beginning with the simplest cellular level (Chapter 2) and build up to the more complex organ system level (Chapters 5–28) to better understand the human organism.
6. Anatomical terms related to the limbs can be confusing. The anatomist calls these the *upper* and *lower limbs*, while *arm* means “between shoulder and elbow,” and *leg* “between knee and ankle.”
7. No matter what position it is in, for descriptive purposes, the body is always imagined to be in the anatomic position, standing erect, arms by the sides, and palms facing forward. In this position directions are given by the terms *superior*, *inferior*, *anterior*, and *posterior*. These are equivalent to the zoologist’s *cephalic*, *caudal*, *ventral*, and *dorsal*. Thus, the eyes are always superior to the mouth, even if the patient is lying down or standing on his head. These terms are not quite equivalent to *above*, *below*, *in front of*, and *behind*. Therefore, to a layperson an acrobat’s feet are *above* her head when she is dangling from a trapeze; to an anatomist they are *inferior* to it.
 - a. To help make the anatomic position “stick” in their minds, stand in the position and ask how it differs from the usual standing position. Students will quickly see that there are just a few differences to remember.
8. Other dimensions are referred to the midline—*median*, *medial*, or *lateral*—or to their closeness to the body surface: *superficial* or *deep*. In the limbs, superior and inferior are replaced with proximal and distal; structures near the trunk are *proximal* and those farther away are *distal*. We

have a problem with the hands and feet: The palms of the hands resemble the soles of the feet and the thumb is equivalent to the great toe. But the *palmar* surface of the hand faces anteriorly and the back is *dorsal*. In the foot we defy logic and call the inferior surface *plantar* (equivalent to *palmar*) and the superior surface *dorsal*, even though it faces upward. To make these terms even more fun, point out that the great toe is *medial* but the thumb is *lateral*.

VISUALS, IN-CLASS DEMONSTRATIONS, AND DISCUSSIONS

1. Use of visuals of the body cavities and internal structures are quite helpful to students.
2. To ease their stress levels, remind students that they already know many structures of the human body. To demonstrate this, large torso models are good for student involvement: Take out all of the internal parts and have students put them back in the proper spots. This works best if done in small groups (of two or three) if you have several torsos.
3. Charts of body cavities and their contents are useful for review.
4. Dissectible models of the adult body are good visuals.
5. Use Figure 1.4 to show the systems of the body. This figure reinforces the fact that the students have knowledge of many of the organs and systems of the human body. Likewise, anytime you can tie learning objectives together it helps students make connections with the textbook content. With that said, when discussing the organ systems be sure and emphasize their functions (included for each system in Figure 1.4) as they relate to homeostasis.
6. Have students locate body regions on their own bodies.
7. Demonstrate preserved human organs and tissues. Seeing the brain, heart, lungs, and kidneys is often exciting to students.
8. Three-dimensional visualization is often difficult for many students, particularly when they try to reconstruct serial sections of an organ or organs. To visually demonstrate what to expect in sections, use a clear plastic container with an irregular object inside and explain how each section might appear. This can be quite helpful.
9. For some fun, call out the common names for a variety of body parts and have the students call out the anatomical names (or the other way around).
10. Use a balloon to demonstrate the relationship between the two layers of serosa by pushing your fist into the balloon. Also, have students put two wet microscope slides together (lengthwise). Demonstrate how the slides will “slip” against each other but are difficult to pull apart. This is a good visual for explaining the “space” between the two layers of serosa. Point out that the pericardium and pleura are good examples of this.
11. Show images of a variety of sections through the human body. It is easier for students to understand sagittal, coronal, parasagittal, and other planes if they see the body sections.
12. When discussing the nine abdominopelvic regions, use Figure 1.11. Since the umbilical region should be the most familiar to the students, start with it and mark an “X” on that region. As you move from one region to another, arbitrarily mark either an “X” or an “O” on each of them. Students will quickly see that you’ve made a tic-tac-toe game. This makes the lesson more fun. At the same time, directional terms can be used to describe the locations of the various abdominopelvic regions; ask students to describe the location of one abdominopelvic region relative to another.
13. To get them thinking about the relationship between structure and function (and as a preliminary to systems to be studied later), ask students to describe the relationships between the cardiovascular and the respiratory systems (or between one of them and the

digestive, endocrine, urinary, lymphatic, or reproductive system), between muscles and bone, between nerves and muscles, and so on. Throughout the course it's important to emphasize that structure is complementary to function.

14. Ask students if they consider one system to be more important than another. If so, why? If not, why not? This gets them thinking about the interrelationships of many of the systems of the body.
15. Tell students to write down the common names for 10 body parts that consist of three letters (arm, leg, eye, ear, etc.); then have them write the names on the board. Next, ask them to substitute the anatomical name for each. You could try this with four-letter words too, but this version can get out of hand.
16. The use of notecards to practice the terminology of this chapter is very helpful. This could also allow students to work together to quiz each other. Even family members or friends can get involved by helping a student practice and review using the notecards.
17. Suggest to the students that they try to use terminology in their everyday lives, such as saying, "I will reach the bowl that is on the superior shelf" or "Can you scratch my superior occipital region for me?"
18. Cutting up fruits or vegetables to show the various planes and sections could also aid in learning.