

The human body is composed of large amounts of fluid, the amount and composition of which must be constantly regulated. The **extracellular fluid** consists of the fluid that surrounds the cells as well as the fluid circulating in blood and lymph. The fluid within cells is the **intracellular fluid**.

Study of the body requires knowledge of directional terms to locate parts and to relate various parts to each other. Planes of division represent different directions in which cuts can be made through the body. Separation of the body into areas and regions, together with the use of the special terminology for directions and locations, makes it possible to describe an area within the human body with great accuracy.

The large internal spaces of the body are cavities in which various organs are located. The **dorsal cavity** is subdivided into the **cranial cavity** and the **spinal cavity (canal)**. The **ventral cavity** is subdivided into the **thoracic** and **abdominopelvic** cavities. Imaginary lines are used to divide the abdomen into regions for study and diagnosis.

## Addressing the Learning Outcomes

### 1. DEFINE THE TERMS *ANATOMY*, *PHYSIOLOGY*, AND *PATHOLOGY*.

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#### EXERCISE 1-1

Write a definition of each term in the spaces below.

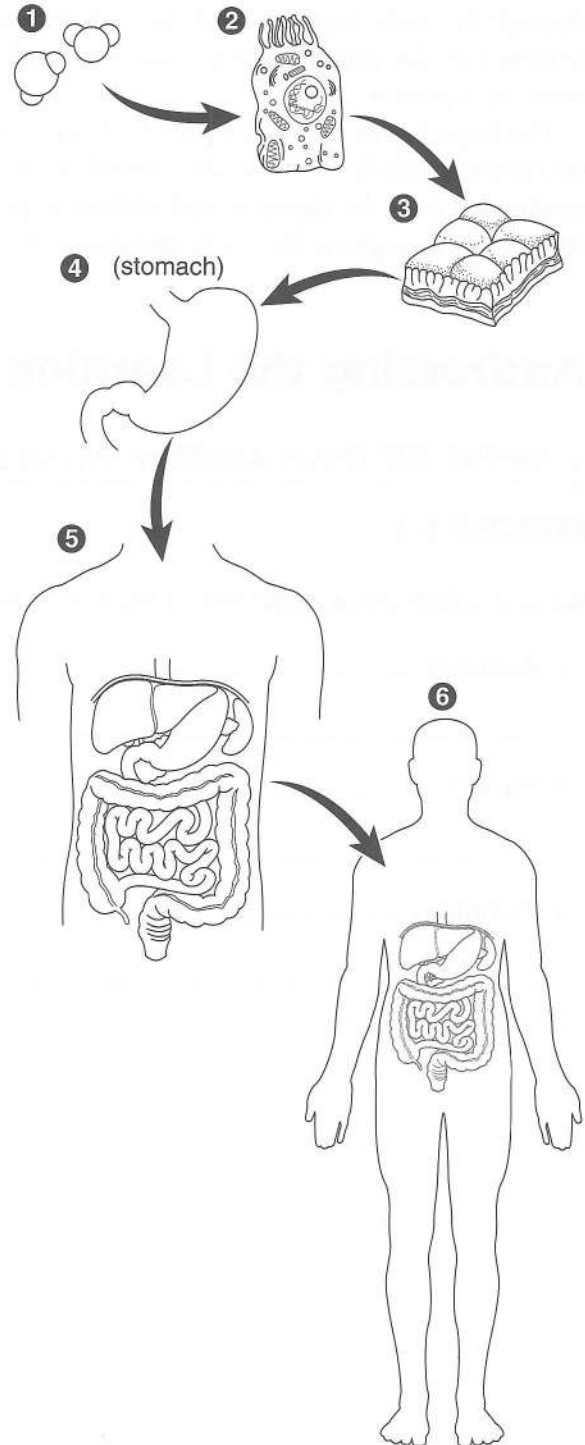
1. Anatomy \_\_\_\_\_  
\_\_\_\_\_
2. Physiology \_\_\_\_\_  
\_\_\_\_\_
3. Pathology \_\_\_\_\_  
\_\_\_\_\_

## 2. DESCRIBE THE ORGANIZATION OF THE BODY FROM CHEMICALS TO THE WHOLE ORGANISM.

### EXERCISE 1-2: Levels of Organization (Text Fig. 1-1)

1. Write the name or names of each labeled part on the numbered lines in different colors.
2. Color the different structures on the diagram with the corresponding color. For instance, if you wrote "cell" in blue, color the cell blue.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_



**3. LIST 11 BODY SYSTEMS AND GIVE THE GENERAL FUNCTION OF EACH.**

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**EXERCISE 1-3**

Write the appropriate term in each blank from the list below.

nervous system	integumentary system	cardiovascular system
respiratory system	skeletal system	urinary system
endocrine system	lymphatic system	digestive system

1. The system that processes sensory information \_\_\_\_\_
2. The system that delivers nutrients to body tissues \_\_\_\_\_
3. The system that breaks down and absorbs food \_\_\_\_\_
4. The system that includes the fingernails \_\_\_\_\_
5. The system that includes the bladder \_\_\_\_\_
6. The system that includes the joints \_\_\_\_\_
7. The system that delivers oxygen to the blood \_\_\_\_\_
8. The system that includes the tonsils \_\_\_\_\_

**4. DEFINE *METABOLISM* AND NAME THE TWO TYPES OF METABOLIC REACTIONS.**

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**EXERCISE 1-4**

Fill in the blanks in the paragraph below using the following terms: ATP, metabolism, catabolism, and anabolism.

The term \_\_\_\_\_ (1) refers to all life-sustaining reactions that occur within the body. The reactions involved in \_\_\_\_\_ (2) assemble simple components into more complex ones. The reactions of \_\_\_\_\_ (3) break down substances into simpler components, generating energy in the form of \_\_\_\_\_ (4). This energy can be used to fuel cell activities.

**5. DEFINE AND GIVE EXAMPLES OF HOMEOSTASIS.**

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See Exercises 1-5 and 1-6.

**6. EXPLAIN HOW NEGATIVE FEEDBACK MAINTAINS HOMEOSTASIS.**

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**EXERCISE 1-5**

Fill in the blanks in the paragraph below using the following terms: activates, shuts off, negative feedback, corrects, homeostasis.

The maintenance of a constant internal body state, known as (1) \_\_\_\_\_, is critical for health. Different body parameters, such as body temperature and blood glucose concentration, are kept constant using (2) \_\_\_\_\_. For example, when the room temperature decreases, the

thermostat (3) \_\_\_\_\_ the furnace to increase heat production. The resulting increase in room temperature (4) \_\_\_\_\_ the initial stimulus, and the thermostat (5) \_\_\_\_\_ the furnace.

### EXERCISE 1-6

Homeostasis involves the regulation of body fluid volume and composition. Fill in the blank after each statement—does it apply to extracellular fluid (EC) or intracellular fluid (IC)?

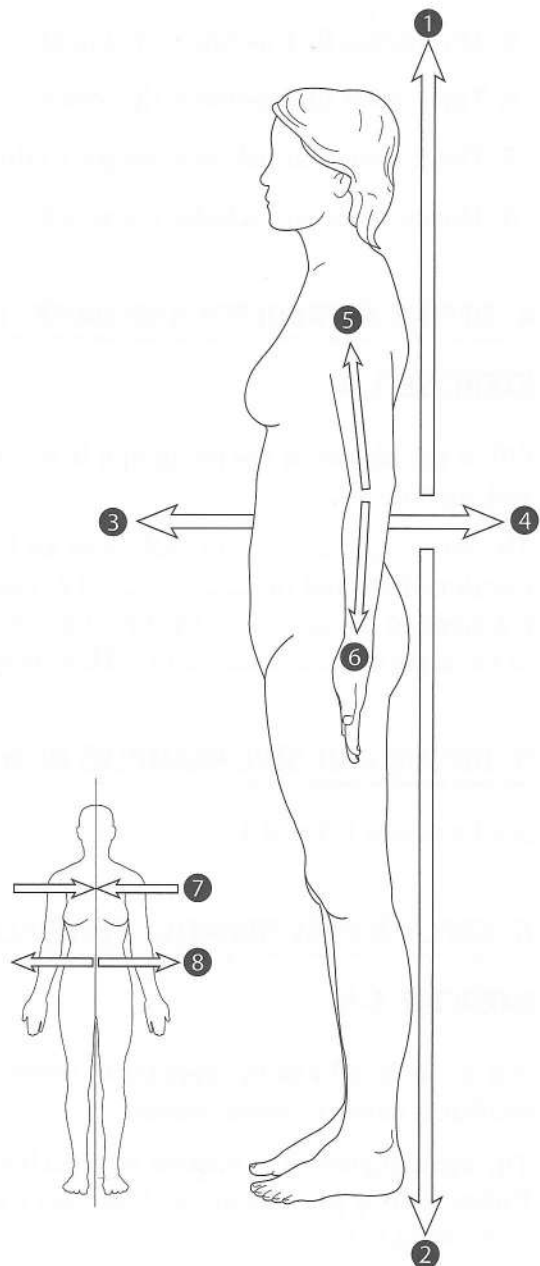
1. Includes lymph and blood \_\_\_\_\_
2. Refers to fluids inside cells \_\_\_\_\_
3. Includes fluid between cells \_\_\_\_\_

## 7. LIST AND DEFINE THE MAIN DIRECTIONAL TERMS FOR THE BODY.

### EXERCISE 1-7: Directional Terms (Text Fig. 1-6)

1. Write the name of each directional term on the numbered lines in different colors.
2. Color the arrow corresponding to each directional term with appropriate color.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_



**EXERCISE 1-8**

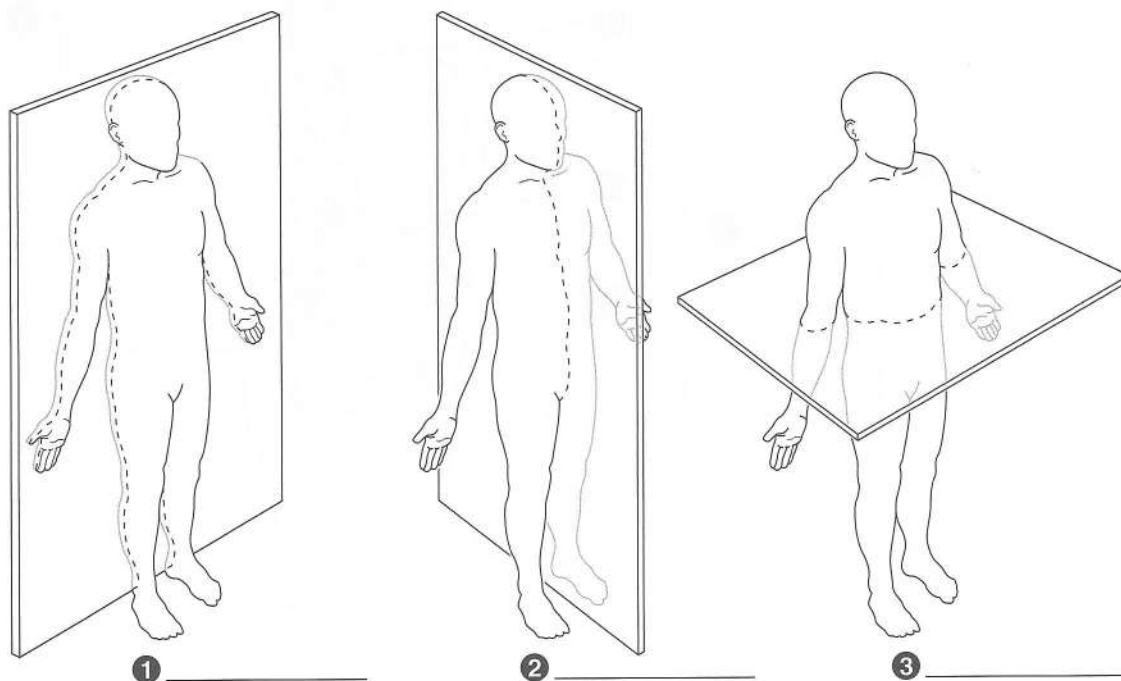
Write the appropriate term in each blank from the list below.

posterior      anterior      medial      distal  
proximal      lateral      horizontal

1. A term that indicates a location toward the front \_\_\_\_\_
2. A term that means farther from the origin of a part \_\_\_\_\_
3. A directional term that means away from the midline (toward the side) \_\_\_\_\_
4. A term that describes the position of the ankle in relation to the toes \_\_\_\_\_
5. A term that describes the position of the shoulder blades in relation to the collar bones \_\_\_\_\_

**8. LIST AND DEFINE THE THREE PLANES OF DIVISION OF THE BODY.****EXERCISE 1-9: Planes of Division (Text Fig. 1-7)**

1. Write the names of the three planes of division on the correct numbered lines in different colors.
2. Color each plane in the illustration with its corresponding color.

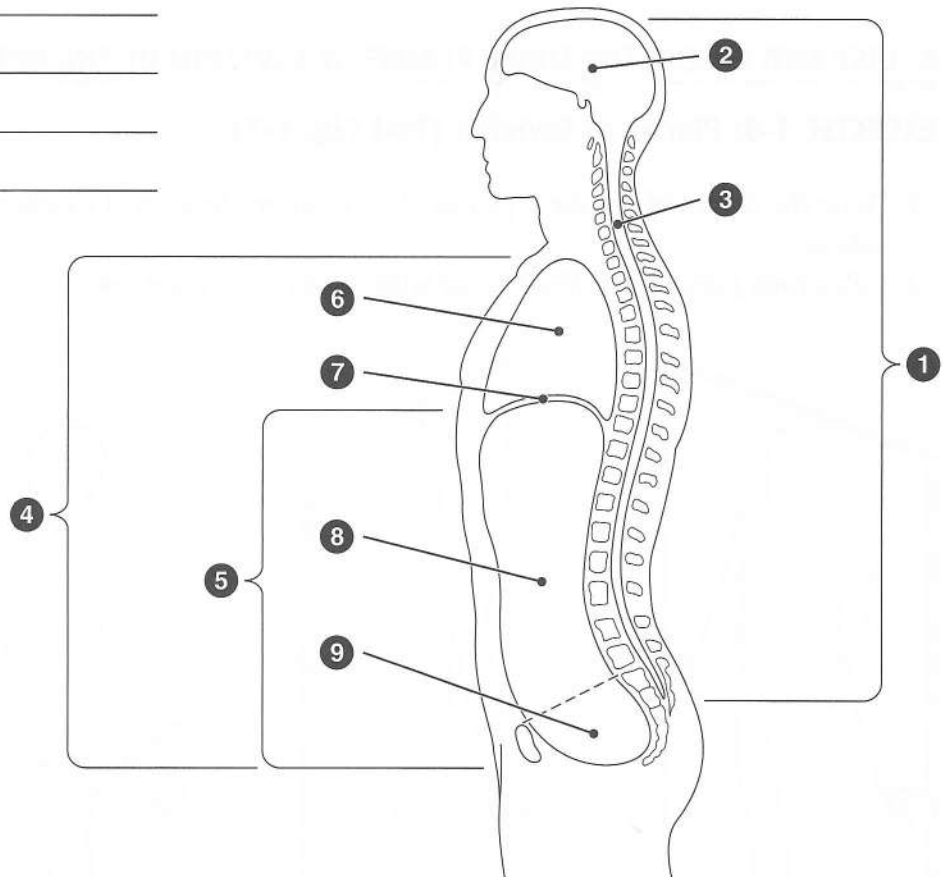


## 9. NAME THE SUBDIVISIONS OF THE DORSAL AND VENTRAL CAVITIES.

### EXERCISE 1-10: Lateral View of Body Cavities (Text Fig. 1-10)

1. Write the names of the different body cavities and other structures in the appropriate spaces in different colors. Try to choose related colors for the dorsal cavity subdivisions and for the ventral cavity subdivisions.
2. Color parts 2, 3, and 6 to 9 with the corresponding color.

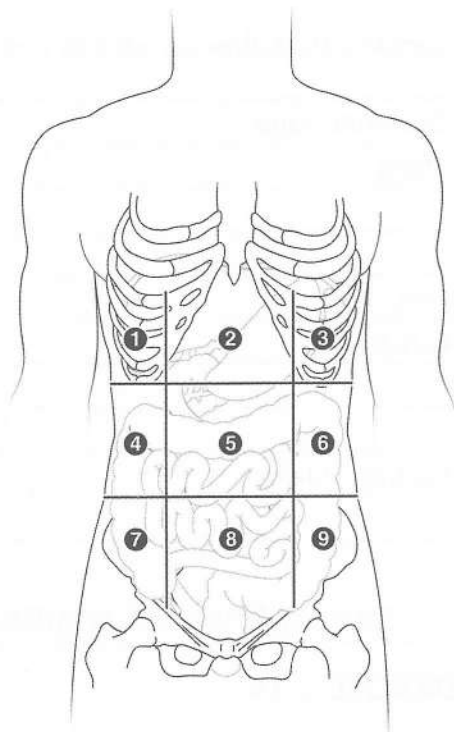
1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_



**10. NAME AND LOCATE THE SUBDIVISIONS OF THE ABDOMEN.****EXERCISE 1-11: Regions of the Abdomen (Text Fig. 1-12)**

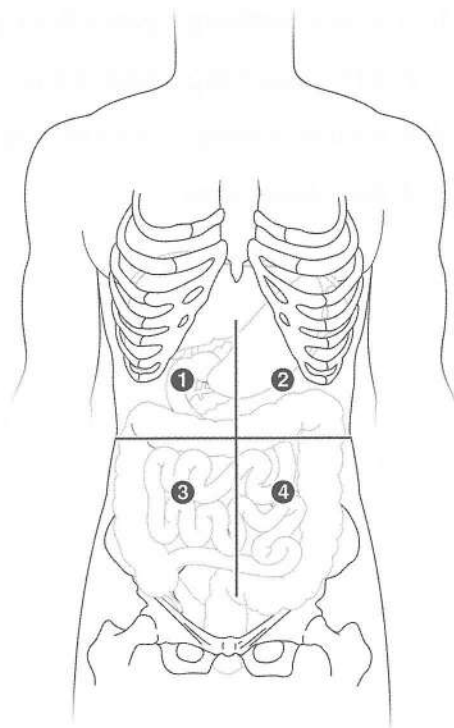
1. Write the names of the nine regions of the abdomen on the appropriate numbered lines in different colors.
2. Color the corresponding region with the appropriate color.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_

**EXERCISE 1-12: Quadrants of the Abdomen (Text Fig. 1-13)**

1. Write the names of the four quadrants of the abdomen on the appropriate numbered lines in different colors.
2. Color the corresponding quadrant in the appropriate color.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_



**11. CITE SOME ANTERIOR AND POSTERIOR BODY REGIONS ALONG WITH THEIR COMMON NAMES.****EXERCISE 1-13**

Complete the following table by writing in the missing terms.

Common Name	Anatomic Adjective
Thigh	
	Antecubital
	Inguinal
Arm	
Forearm	
	Axillary
	Tarsal
Shoulder blade	
	Acromial

**12. FIND EXAMPLES OF ANATOMIC AND PHYSIOLOGIC TERMS IN A CASE STUDY.****EXERCISE 1-14**

Read through the case study at the beginning of the chapter and the case study discussion at the end of the chapter. Find an example of each type of medical term listed below and write it in the blank.

- A term describing one of four abdominal regions \_\_\_\_\_
- A term describing a particular region of the upper limb \_\_\_\_\_
- A term describing a body cavity \_\_\_\_\_
- A term describing one of nine abdominal regions \_\_\_\_\_
- A directional term \_\_\_\_\_