

## ANATOMY & PHYSIOLOGY SUMMER ASSIGNMENT

Your assignment is to complete the summer PDF assignment Chapter 1 The Human Body: An Orientation. Be prepared to be evaluated on the information shortly after your arrival to school in September.

To complete your assignment, it will prove helpful to use the Google Classroom site set up for the course; Honors Anatomy & Physiology. The join code is **ldsb324**. If you experience any technical problems please stop by to see me in N12 or email me at [dbongiovanni@pthsd.net](mailto:dbongiovanni@pthsd.net).

The Google Classroom site contains PowerPoint note files from Chapter 1 that pertain to your assignment as well as a link to the accompanying YouTube video lecture.

Also, you might research the following phrases for additional help: “anatomical body regions”, “anatomical directional terms”, “anatomical planes”, and “human body cavities”. Please check the validity of a website before using it as a resource. Your grade depends upon it!

Mr. Bongiovanni

# The Human Body: An Orientation

## Student Objectives

*When you have completed the exercises in this chapter, you will have accomplished the following objectives:*

### An Overview of Anatomy and Physiology

1. Define *anatomy* and *physiology* and describe their subdivisions.

### Levels of Structural Organization

3. Name the different levels of structural organization that make up the human body and explain their relationships.
4. List the 11 organ systems of the body and briefly explain the major function(s) of each system.

### The Language of Anatomy

10. Describe the anatomical position.
11. Use correct anatomical terminology to describe body directions, body regions, and body planes or sections.
12. Locate and name the major body cavities and their subdivisions and list the major organs contained within them.
14. Name the four quadrants of the abdominopelvic cavity and list the organs they contain.

1. Using the key choices, identify the body systems to which the following organs or functions belong. Insert the correct answers in the answer blanks.

**Key Choices**

- |                   |                         |                 |                |
|-------------------|-------------------------|-----------------|----------------|
| A. Cardiovascular | D. Integumentary        | F. Muscular     | I. Respiratory |
| B. Digestive      | E. Lymphatic/<br>Immune | G. Nervous      | J. Skeletal    |
| C. Endocrine      |                         | H. Reproductive | K. Urinary     |

- |       |   |
|-------|---|
| _____ | 1. Rids the body of nitrogen-containing wastes                      |
| _____ | 2. Is affected by the removal of the thyroid gland                  |
| _____ | 3. Provides support and levers on which the muscular system can act |
| _____ | 4. Includes the heart   |
| _____ | 5. Protects underlying organs from drying out and mechanical damage |
| _____ | 6. Protects the body; destroys bacteria and tumor cells             |
| _____ | 7. Breaks down foodstuffs into small particles that can be absorbed |
| _____ | 8. Removes carbon dioxide from the blood                            |
| _____ | 9. Delivers oxygen and nutrients to the body tissues                |
| _____ | 10. Moves the limbs; allows facial expression                       |
| _____ | 11. Conserves body water or eliminates excesses                     |
| _____ | 12. Allows conception and childbearing                              |
| _____ | 13. Controls the body with chemicals called hormones                |
| _____ | 14. Is damaged when you cut your finger or get a severe sunburn     |

2. Using the key choices from Exercise 1, choose the organ system to which each of the following sets of organs belongs. Enter the correct letters in the answer blanks.

- |       |  |  |
|-------|--|--|
| _____ | 1. Blood vessels, heart                | 5. Esophagus, large intestine, stomach |
| _____ | 2. Pancreas, pituitary, adrenal glands | 6. Breastbone, vertebral column, skull |
| _____ | 3. Kidneys, bladder, ureters           | 7. Brain, nerves, sensory receptors    |
| _____ | 4. Testis, vas deferens, urethra       |  |

## The Language of Anatomy

1. Complete the following statements by choosing an anatomical term from the key choices. Enter the appropriate answers in the answer blanks.

### Key Choices

- |             |             |              |               |
|-------------|-------------|--------------|---------------|
| A. Anterior | D. Inferior | G. Posterior | J. Superior   |
| B. Distal   | E. Lateral  | H. Proximal  | K. Transverse |
| C. Frontal  | F. Medial   | I. Sagittal  |               |

- |   |  |
|---|--|
| <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> | <p>1. In the anatomical position, the nose and belly button are on the <u>(1)</u> body surface, the calves and shoulder blades are on the <u>(2)</u> body surface, and the soles of the feet are the most <u>(3)</u> part of the body. The nipples are <u>(4)</u> to the shoulders and <u>(5)</u> to the armpits. The heart is <u>(6)</u> to the spine and <u>(7)</u> to the lungs. The knee is <u>(8)</u> to the toes but <u>(9)</u> to the thigh. In humans, the ventral surface can also be called the <u>(10)</u> surface; however, in four-legged animals, the ventral surface is the <u>(11)</u> surface.</p> <p>6. If an incision cuts the brain into right and left parts, the section is a <u>(12)</u> section, but if the brain is cut so that superior and inferior parts result, the section is a <u>(13)</u> section. You are told to cut an animal along two planes so that the paired lungs are observable in both sections. The two sections that meet this requirement are the <u>(14)</u> and <u>(15)</u> sections.</p> <p>10. The thoracic cavity is <u>(16)</u> to the abdominopelvic cavity and <u>(17)</u> to the spinal cavity.</p> <p>11. _____</p> <p>12. _____ 15. _____</p> <p>13. _____ 16. _____</p> <p>14. _____ 17. _____</p> |
|---|--|

2. In 1–6 below, a directional term (e.g., distal in 1) is followed by terms indicating different body structures or locations (e.g., the elbow/the shoulder). In each case, choose the structure or location that best matches the directional term given.

- |  |   |
|--|---|
| 1. Distal—the elbow/the shoulder       | 4. Superficial—the skeleton/the muscles   |
| 2. Lateral—the shoulder/the breastbone | 5. Proximal—the knee/the foot             |
| 3. Superior—the forehead/the chin      | 6. Inferior—the liver/the small intestine |

3. Circle the term or phrase that does not belong in each of the following groupings.

1. Transverse      Distal      Frontal      Sagittal

2. Lumbar      Flank      Antecubital      Abdominal      Scapular

3. Calf      Brachial      Femoral      Popliteal

4. Gall bladder      Stomach      Liver      Right upper quadrant

4. Select the key choices that identify the following body parts or areas. Enter the appropriate answers in the blanks.

**Key Choices**

A. Abdominal

E. Calf

I. Gluteal

M. Popliteal

B. Axillary

F. Cervical

J. Groin

N. Pubic

C. Brachial

G. Digital

K. Lumbar

O. Scapular

D. Buccal

H. Femoral

L. Occipital

P. Umbilical

\_\_\_\_\_ 1. Armpit

\_\_\_\_\_ 2. Thigh region

\_\_\_\_\_ 3. Buttock area

\_\_\_\_\_ 4. Neck region

\_\_\_\_\_ 5. "Belly button" area

\_\_\_\_\_ 6. Pertaining to the toes

\_\_\_\_\_ 7. Posterior aspect of head

\_\_\_\_\_ 8. Area where trunk meets thigh

\_\_\_\_\_ 9. Back area from ribs to hips

\_\_\_\_\_ 10. Pertaining to the cheek

5. Correctly label all body areas indicated with leader lines on Figure 1.7. Some of the terms you will need are in the key of Exercise 4; others will have to be provided from memory. In addition, identify the sections or cuts labeled A and B in the figure.

Section A: \_\_\_\_\_ Section B: \_\_\_\_\_

The body position indicated by the diagrams in Figure 1.7 are fairly close to the anatomical position. What body part(s) are incorrectly depicted? \_\_\_\_\_

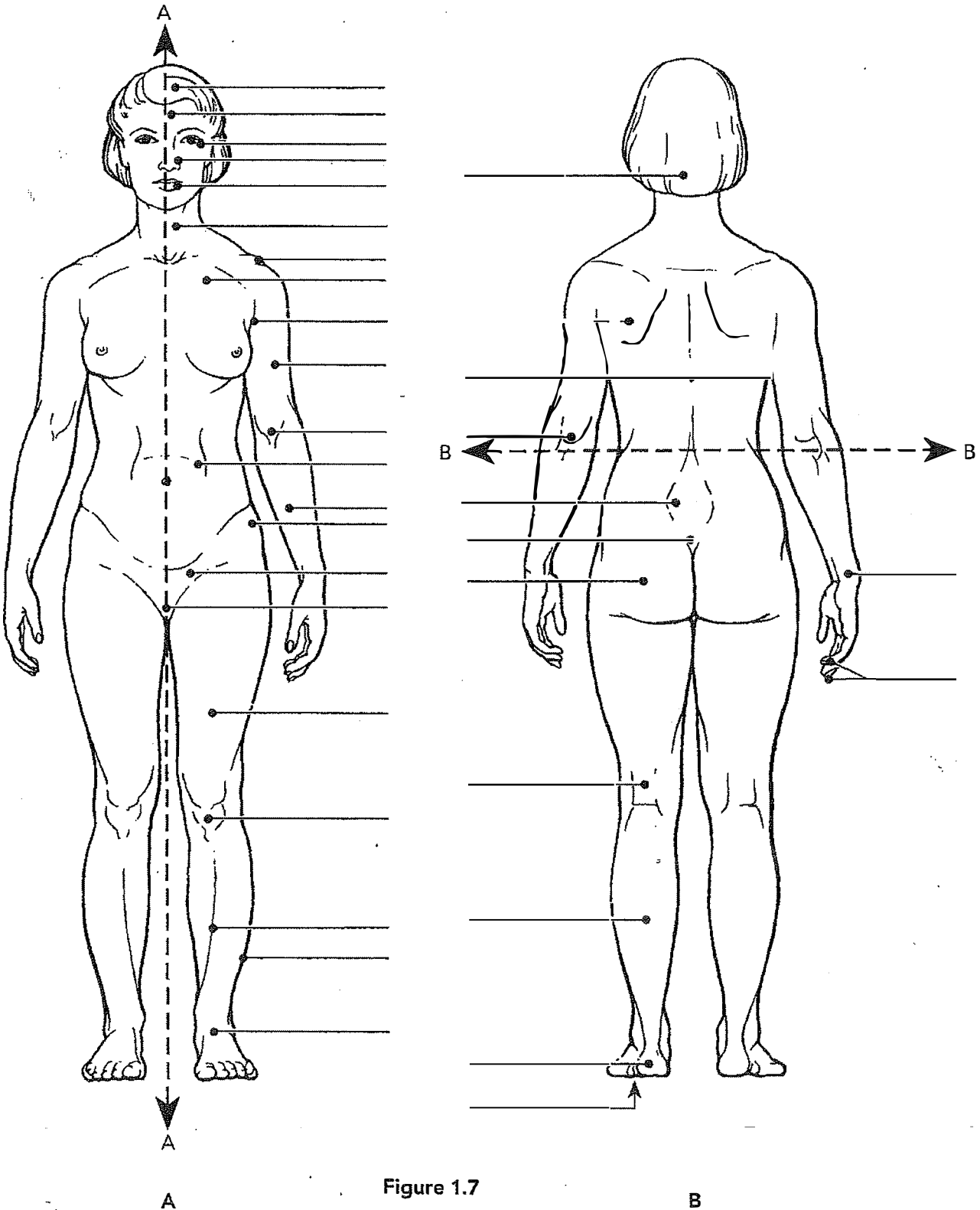


Figure 1.7

6. Complete the following statements by filling in the answer blanks with the correct terms.

- \_\_\_\_\_ 1. The abdominopelvic and thoracic cavities are subdivisions of the (1) body cavity; the cranial and spinal cavities are
- \_\_\_\_\_ 2. parts of the (2) body cavity. The (3) body cavity is totally surrounded by bone and provides very good
- \_\_\_\_\_ 3. protection to the structures it contains.

7. Using the key choices, identify the body cavities where the following body organs are located. Enter the appropriate answers in the answer blanks.

**Key Choices**

A. Abdominopelvic

B. Cranial

C. Spinal

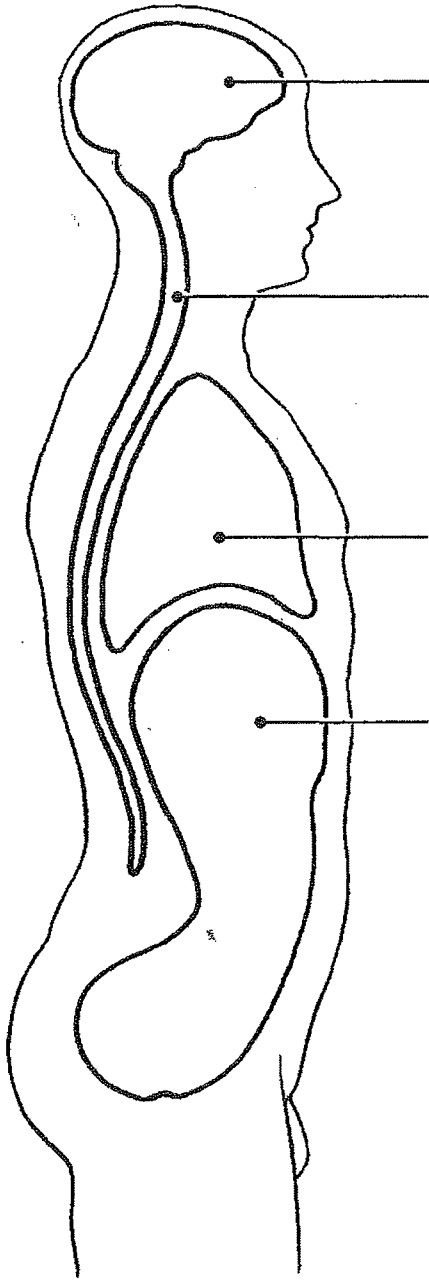
D. Thoracic

- |       |                    |       |             |
|-------|--------------------|-------|-------------|
| _____ | 1. Stomach         | _____ | 7. Bladder  |
| _____ | 2. Small intestine | _____ | 8. Heart    |
| _____ | 3. Large intestine | _____ | 9. Lungs    |
| _____ | 4. Spleen          | _____ | 10. Brain   |
| _____ | 5. Liver           | _____ | 11. Rectum  |
| _____ | 6. Spinal cord     | _____ | 12. Ovaries |

8. Select different colors for the dorsal and ventral body cavities. Color the coding circles below and the corresponding cavities in part A of Figure 1.8. Complete the figure by labeling those body cavity subdivisions that have a leader line.

Dorsal body cavity

Ventral body cavity



A



9. Choose different colors for the cavities listed with color coding circles. Color the coding circles and the corresponding cavities in Figure 1.9. Complete this exercise by identifying the structure provided with a leader line.

- Pleural cavities
- Pericardial cavity
- Abdominal cavity
- Pelvic cavity

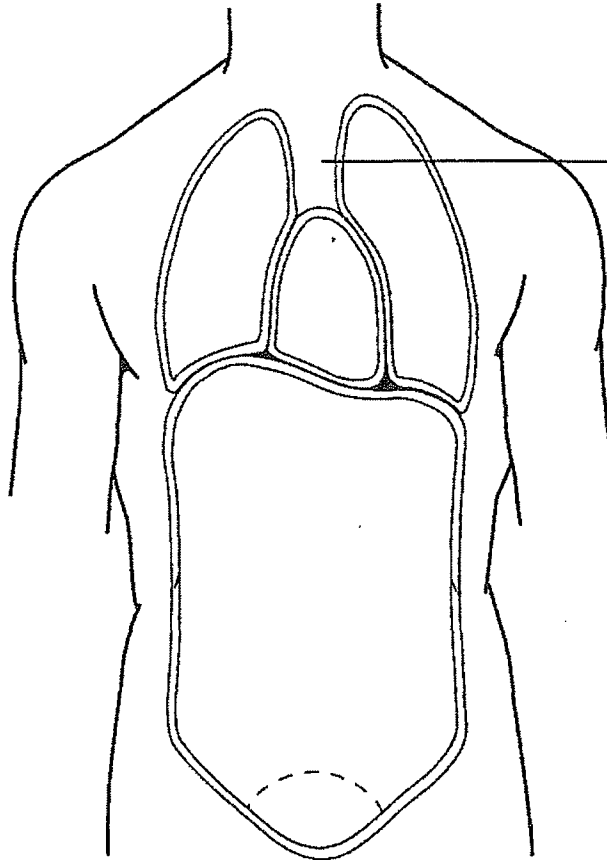


Figure 1.9

10. From the key choices, select the body cavities where the following surgical procedures would occur. Insert the correct answers in the answer blanks. Be precise; select the name of the cavity subdivision if appropriate.

**Key Choices**

- |              |             |
|--------------|-------------|
| A. Abdominal | D. Pelvic   |
| B. Cranial   | E. Thoracic |
| C. Dorsal    | F. Ventral  |

- \_\_\_\_\_ 1. Surgery to remove a cancerous prostate gland
- \_\_\_\_\_ 2. Coronary bypass surgery (heart surgery)
- \_\_\_\_\_ 3. Removal of a brain tumor
- \_\_\_\_\_ 4. Surgery to remove the distal part of the colon and establish a colostomy
- \_\_\_\_\_ 5. Gallbladder removal