

ANATOMY & PHYSIOLOGY SUMMER ASSIGNMENT

Your assignment is to complete the attached packet 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 MOODLE site set up for the course. Bongiovanni – Honors Anatomy & Physiology. You do not need to register for the course to access the information. You may enter the site as a guest if you choose. If you experience any technical problems please stop by to see me in D80 or email me at dbongiovanni@pthsd.k12.nj.us

The MOODLE site contains instructions for accessing the online version of your textbook as well as powerpoint slides from Chapter 1 that pertain to your assignment.

Also, you might Google 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.
2. Explain the principle of complementarity.

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.

4. 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/
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

5. Using the key choices from Exercise 4, 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 | |

- | | | |
|-------|-----|--|
| _____ | 1. | In the anatomical position, the nose and belly button are on the <u>(1)</u> body surface, the calves and shoulder blades are |
| _____ | 2. | 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 |
| _____ | 3. | 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 |
| _____ | 4. | 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 |
| _____ | 5. | animals, the ventral surface is the <u>(11)</u> surface. |
| _____ | 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. |
| _____ | 7. | 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> |
| _____ | 8. | sections. |
| _____ | 9. | |
| _____ | 10. | The thoracic cavity is <u>(16)</u> to the abdominopelvic cavity and <u>(17)</u> to the spinal cavity. |
| _____ | 11. | |
| _____ | 12. | _____ 15. |
| _____ | 13. | _____ 16. |
| _____ | 14. | _____ 17. |

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. Epigastric Hypogastric Lumbar Left upper quadrant

5. Orbital cavity Nasal cavity Ventral cavity Oral cavity

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 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? _____

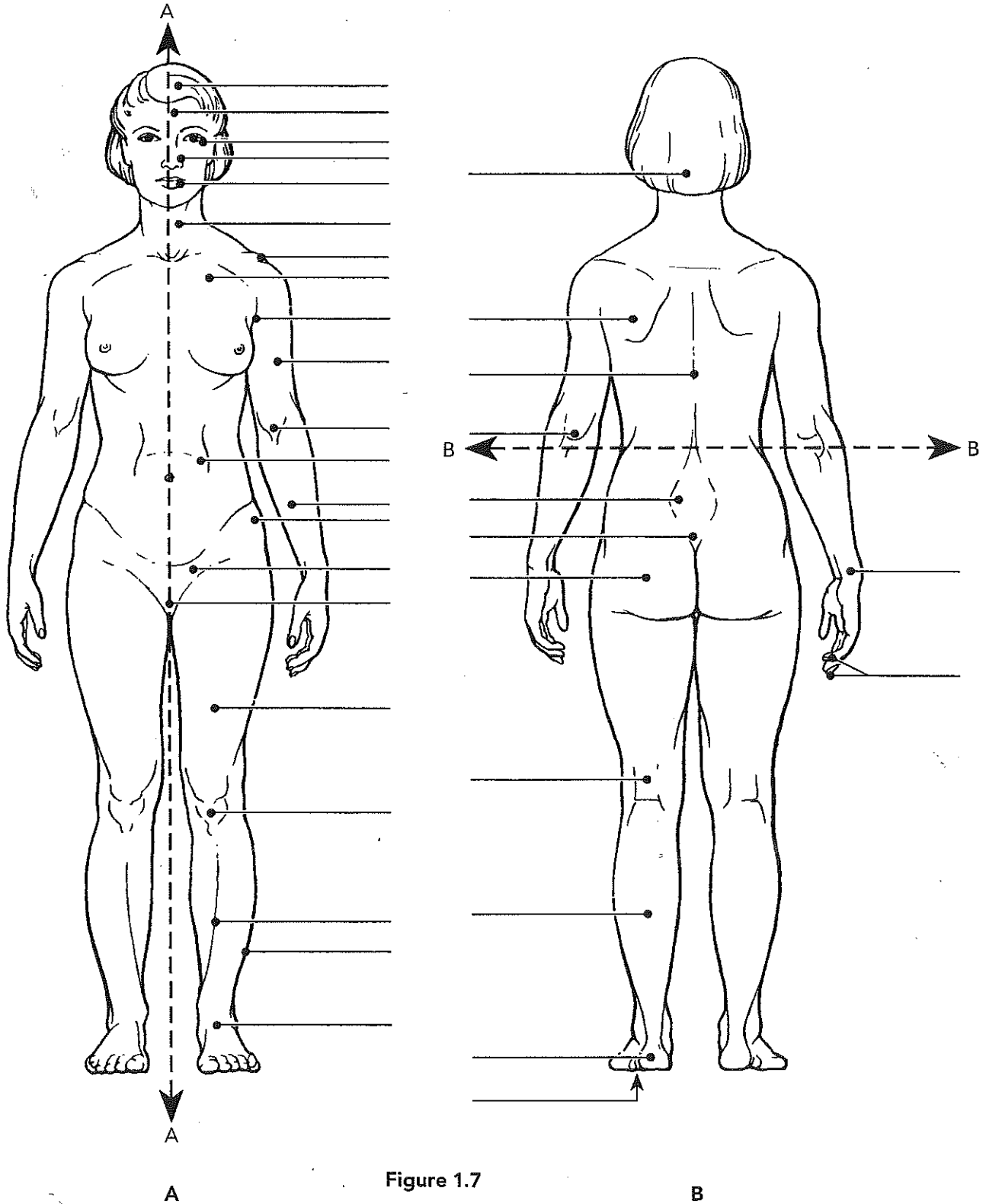


Figure 1.7

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
- _____ 3. totally surrounded by bone and provides very good protection to the structures it contains.

3. Surrounds the abdominopelvic cavity organs _____

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

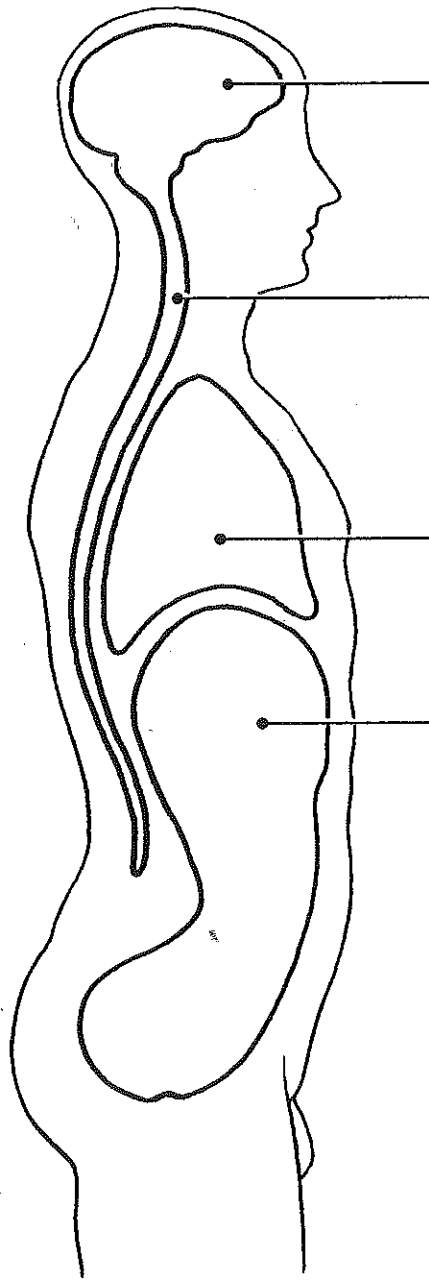
Key Choices

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

10. 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

11. 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

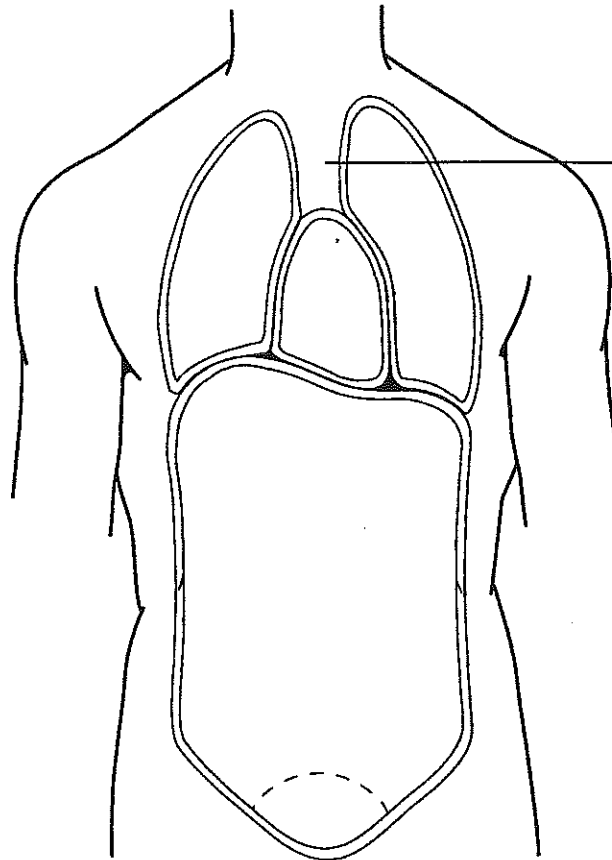


Figure 1.9

12. 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 |