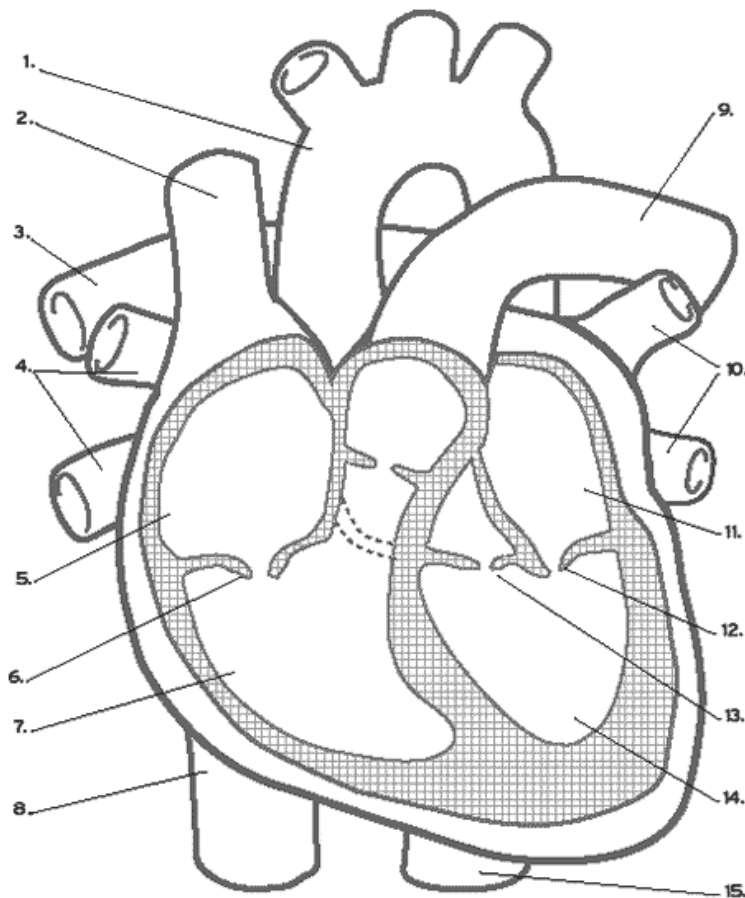


Name: \_\_\_\_\_

Date: \_\_\_\_\_

# Heart Dissection Pre-Lab Questions!!

1. Label the diagram of the human heart below.



2. How many chambers are found in the mammalian heart? List these chambers.

3. Which chambers are the pumping chambers of the heart?

4. Which chambers are the receiving chambers of the heart?

5. What is the purpose of heart valves?

6. Vessels that carry blood away from the heart are called \_\_\_\_\_, while \_\_\_\_\_ carry blood toward the heart.

7. Which artery is the largest and why?

# Heart Dissection Lab

## Directions:

1. Obtain a preserved sheet heart. Rinse it in water thoroughly to remove as much of the preservative as possible. Also run water into the larger blood vessels to force any blood clots out of the heart chambers.
2. Place the heart on the dissection tray with its ventral surface up ("ventral" = the front side of the heart closest to your chest).

## Proceed as follows:

VENTRAL SURFACE



DORSAL SURFACE



- a. Locate the *visceral pericardium*, which appears as a thin, transparent layer on the surface of the heart.
  - Use a scalpel to remove a portion of this layer and expose the *myocardium* beneath.
  - Also note the abundance of fat along the paths of various blood vessels. This adipose tissue occurs in the loose connective tissue that underlies the visceral pericardium.

b. Identify the following:

- *Pericardium*
- *Right Atrium*
- *Right Ventricle*
- *Pulmonary Artery*
- *Left Atrium*
- *Left Ventricle*
- *Aorta*
- *Apex*

3. Examine the dorsal surface of the heart (the back side closest to your back).
- Locate the stumps of two relatively thin-walled blood vessels that enter the right atrium.
  - Demonstrate this connection by passing a slender probe through them.
  - The upper vessel is the *superior vena cava*, and the lower one is the *inferior vena cava*.

**QUESTION A.** How can you tell which side of the heart is the ventral surface (the surface closer to your chest)?

4. Open the *right atrium*. To do this, follow these steps:
- a. Insert a blade of the scissors OR use the scalpel into the *superior vena cava* and cut downward through the atrial wall.
  - b. Open the chamber, locate the *right atrioventricular valve* (tricuspid valve) and examine its cusps.
  - c. Using the faucet and sink, run a low-flowing stream of water through the tricuspid valve to fill the chamber of the *right ventricle*.
  - d. Gently squeeze the ventricles and watch the cusps of the valve as the water moves up against them.

**QUESTION B.** Describe the action of the tricuspid valve when the ventricle is full.

5. Open the *right ventricle* as follows:
  - a. Continue cutting downward through the *tricuspid valve* and the *right ventricular wall* until you reach the apex of the heart.
  - b. Find the opening to the *pulmonary trunk* and use the scissors to cut upward through the wall of the *right ventricle*. Follow the pulmonary trunk until you have exposed the *pulmonary valve*.
  - c. Examine the valve and its cusps.

QUESTION C. Compare the structure of the tricuspid valve with that of the pulmonary valve.

QUESTION D. How do the walls of the atria compare with the walls of the ventricles and why are they different?

6. Open the left side of the heart. To do this, follow these steps:
  - a. Insert the blade of the scissors or scalpel through the wall of the *left atrium* and cut downward to the *apex* of the heart.
  - b. Open the *left atrium* and locate the four openings of the *pulmonary veins*. Pass a slender probe through each opening and locate the stump of its vessel.
  - c. Examine the *right atrioventricular valve* (bicuspid valve or mitral valve) and its cusps.
  - d. Also examine the *left ventricle* and compare the thickness of its wall with that of the *right ventricle*.

QUESTION E. Describe how the right ventricle wall and left ventricle wall differ and describe why they would be different.

7. Locate the *aorta*, which leads away from the *left ventricle*, and proceed as follows:
  - a. Compare the thickness of the *aortic wall* with that of the *pulmonary trunk*.
  - b. Use scissors to cut along the length of the *aorta* to expose the *aortic valve* at its base.
  - c. Examine the cusps of the valve and locate the openings of the *coronary arteries* just distal to them.

**QUESTION F.** Describe how the wall of the *aorta* and the wall of the *pulmonary trunk* differ and describe why they would be different.

8. As a review, locate and identify the stumps of each of the major blood vessels associated with the heart.

9. Trace the blood flow through the heart beginning with the *vena cavae* and ending with the *aorta*.

**QUESTION G.** Using words and Arrows: Trace blood flow through the major blood vessels and heart, starting with superior and inferior *vena cava*. Indicate where the blood is oxygenated and deoxygenated.

10. Throw the heart in the trash and wash all supplies with **soap and water**. Leave to dry on the side table on top of paper towels.