Name _____

Date _____

Submarines

Unafraid of the dark? Not bothered by tight spaces? Okay with being deep underwater? If so, life aboard a submarine might be for you. A submarine (or "sub" for short) is a boat that can dive deep into the ocean. Once there, it can stay submerged for days, weeks—even months at a time. Pretty incredible, huh? Subs have several key components that enable them to accomplish this amazing feat.

Hull

A sub's hull contains everything (crew, engine, supplies, equipment) inside the sub. The hull is shaped like a tube, which allows the sub to glide through the water. Made of steel or titanium, sub hulls are super strong. They need to be. That's because there's a lot of pressure underwater. The deeper the sub goes, the higher the pressure becomes.

Planes

Birds have wings. Subs have planes. The planes look and act like wings. The sub's planes can be tilted to change the direction the sub moves through the water. By tilting the planes down, the pilot can make the sub point up. By tilting the planes up, the pilot can make the sub point down.

Tanks

While the planes help the sub point up or down, it's the tanks that control how *buoyant* the sub is. The tanks can be filled with air or water. If the sub wants to float at the surface, the tanks are filled with air. If the sub wants to dive deep underwater, the tanks are filled with water.

Engine

Subs don't use gas engines. That's because gas engines need air to work. Instead of gas engines, subs use electric motors. In more advanced subs, nuclear power is used.

Tower

Subs are shaped like tubes. But they *do* have a single tower that pokes up from the top. This tower is very important, as it contains the sub's navigation system. This gives information to the sub pilot about the sub's precise location, as well as the location of the objects around

1) As used in paragraph 1, the word **components** means

A. parts

B. rules

C. wings

D. buttons

2) Which of the following is NOT discussed in the passage?

A. the engine

B. the hull

C. the planes

D. the propeller

3) According to the passage, a sub's hull MIGHT be made of

A. wood

B. iron

C. titanium

D. silver

4) Using the information in the section titled "Hull" as a guide, which of the following statements is correct?

A. The pressure at 58 meters below sea level is **lower** than the pressure at 71 meters below sea level.

B. The pressure at 389 meters below sea level is **lower** than the pressure at 340 meters below sea level.

C. The pressure at 9 meters below sea level is **higher** than the pressure at 28 meters below sea level.

D. The pressure at 195 meters below sea level is **higher** than the pressure at 198 meters below sea level.

5) Imagine the sub pilot wants to make the sub dive. How does he or she do this?

A. Tilt the planes down and fill the tanks with air.

B. Tilt the planes up and fill the tanks with air.

C. Tilt the planes down and fill the tanks with water.

D. Tilt the planes up and fill the tanks with water.

6) Read the following sentence. Then answer the question below.

Neither electric motors nor nuclear power plants need air to work, which makes them perfect for use underwater.

If added to the passage, where would this sentence fit best?

A. in the section titled, "Hull"

B. in the section titled, "Planes"

C. in the section titled, "Engine"

D. in the section titled, "Tower"

7) As used in the section titled "Tower," which of these words is closest in meaning to **navigation**?

A. shape

B. location

C. tube

D. submarine

8) What part of the submarine do you think is most important? Explain your thinking.