8.18 Modeling Waves through Various Mediums Reading Science Questions

- 1. As the temperature of seawater increases from 15° C to 20° C, sound velocity through the seawater-
 - **A** remains the same.
 - **B** increases.
 - C decreases.
 - **D** depends on the distance of the observer from the sound source.
- 2. The first supersonic flight was in 1947. It was just above the speed of sound. Which altitude would you expect Captain Yeager to have used for his flight?
 - A Sea level
 - **B** 1,000 m
 - **C** 13,700 m (within altitude used by commercial planes today)
 - **D** 85,000 m (where meteor showers originate)
- 3. Which plane's velocity was greatest?
 - A Yeager's Bell X-1
 - **B** Concorde
 - **C** SR 71 Blackbird
 - **D** None; they all traveled at the same speed
- 4. A torpedo is launched underwater, targeting a naval vessel about 5,000 m away. How can the vessel detect the torpedo before it reaches the vessel?
 - A By seeing it flying above the water
 - **B** By listening for it in the air
 - **C** By listening for it underwater
 - **D** None of the above; it won't be able to detect it in time.
- 5. A Navy vessel is traveling due north during wartime. A torpedo has been launched by an enemy directly toward the stern (rear) of the vessel. Can the vessel outrun the torpedo if both continue in a straight line due north?
 - A Yes, the Navy vessel is faster.
 - **B** No, the Navy vessel is slower.
 - **C** Maybe, since both travel at the same speed.
 - **D** Maybe, based on the temperature of the water.
- 6. Why is it harder to build a supersonic ship than a supersonic airplane?
 - A Sound velocity is greater in water, and it is harder to move through.
 - **B** Sound velocity is greater in water, and it is easier to move through.
 - **C** Sound velocity is greater in air, and it is harder to move through.
 - **D** Sound velocity is smaller in air, and it is harder to move through.