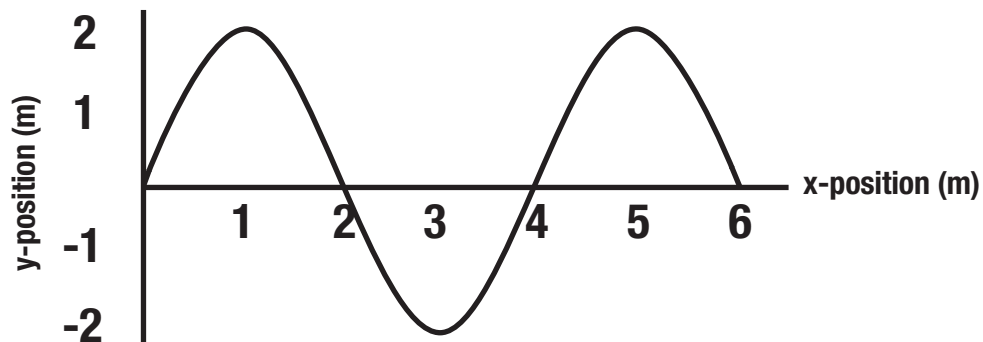


Work each of the following problems. SHOW ALL WORK.

1. A child sitting at the end of a dock notices that 8 wavelengths pass by in 4 seconds. What is the frequency of the waves passing the dock?
2. What is the period of the waves from the previous question?
3. Using the diagram below, determine the wavelength and amplitude of the wave:



4. A pendulum oscillates 12 times in 4 seconds.
 - a. What is the frequency of the oscillations?
 - b. What is the period of the oscillations?

Work each of the following problems. SHOW ALL WORK.

c. What is the length of the pendulum?

5. A pendulum is 0.25 m long. What is the frequency of its oscillations?

6. A water wave has a frequency of 2 Hz, and there are 3 m between each crest on the wave. How fast is the wave moving?

Work each of the following problems. SHOW ALL WORK.

7. Sound waves travel at roughly 340 m/s at room temperature. The minimum hearing range of a human is 20 Hz. What is the wavelength of a sound wave?
8. If a spring requires 20 N to be compressed a distance of 10 cm, what is its spring constant (N/m)?
9. How much potential energy is stored in the spring from the previous question?