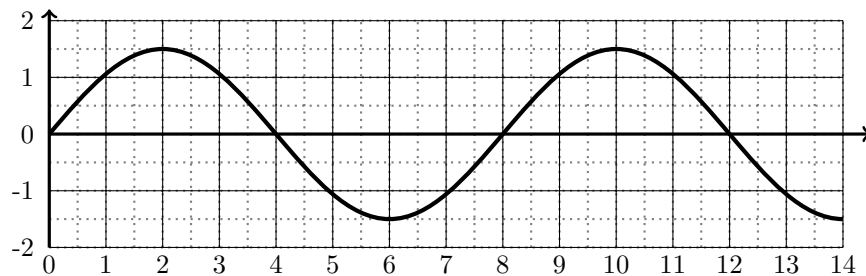


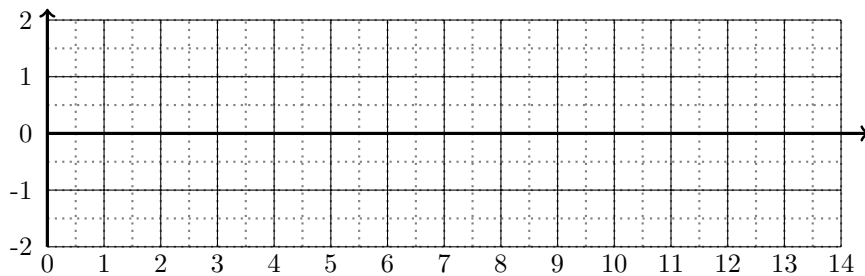
## Waves #1

1. The wave below is traveling at 21 m/s. All measurements are in meters.



- (a) What is the amplitude?
- (b) What is the wavelength?
- (c) What is the frequency?
2. A buoy on the ocean stays at a stationary location. An ocean wave comes toward it. The distance between one crest and the next crest is 6.0 m. The buoy moves up and down with a frequency of 0.25 Hz. The amplitude of the wave is 1.0 m.

- (a) Draw a picture of this situation.



- (b) What is the wavelength of the wave?
- (c) What is the period of the wave?
- (d) How fast is the wave travelling?

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3. If a child on a swing goes back and forth (one oscillation) 11 times in 30 seconds, find her period and frequency.
4. Why does it make sense that a wave with a higher frequency also must have a shorter wavelength?
5. A sound wave has a wavelength of 2.13 m and a frequency of 160 Hz, what is the velocity of the wave?
6. The radio station WZPL broadcasts at a frequency of 99.5 MHz (that's  $99.5 \times 10^6$  Hz). Radio waves travel at a speed of  $3.00 \times 10^8$  m/s. How long is the wavelength of WZPL's radio waves?