

Physics Concept: Period

- 1) What is the definition of period in your own words?
- 2) What is the unit for period? What is the symbol used to represent period?
- 3) Write down two equations you can use to solve for period.
- 4) A swimmer takes 52 seconds to make 1 lap. What is their period? (52s)
- 5) A clock ticks 3 times every 6 seconds. Find the period. (2s)
- 6) A man exercising can do 18 pushups in 22 seconds. Find the period. (1.22 s)
- 7) If 14 waves hit a dock every 26 seconds, what is the period? (1.86 s)
- 8) Current switches directions 180 times every 3 seconds. What is the period? (0.016 s)
- 9) A pendulum makes exactly 50 vibrations in 10.0 s. What is its period? (0.2 s)
- 10) A frequency of 7 Hz would be equivalent to what period? (0.14 s)
- 11) What is the relationship between period and frequency? If you know your frequency, what equation can you use to solve for period?

Physics Concept: Frequency

- 1) What is the definition of frequency in your own words?
- 2) What is the SI unit for frequency? What is the symbol used to represent frequency?
- 3) Write down two equations you can use to solve for frequency.
- 4) A swimmer takes 52 seconds to make 1 lap. What is their frequency? (0.02 Hz)
- 5) A clock ticks 3 times every 6 seconds. Find the frequency. (0.5 Hz)
- 6) A man exercising can do 18 pushups in 22 seconds. Find the frequency. (0.81 Hz)
- 7) If 14 waves hit a dock every 26 seconds, what is the frequency? (0.54 Hz)
- 8) Current switches directions 180 times every 3 seconds. What is the frequency? (60 Hz)
- 9) A pendulum makes exactly 50 vibrations in 10.0 s. What is its frequency? (5 Hz)
- 10) A period of 32 second would be equivalent to what frequency? (0.03 Hz)
- 11) What is the relationship between frequency and period? If you know your period, what equation can you use to solve for frequency?

Physics Concept: Wave Speed

- 1) What is the velocity of a wave with a frequency of 550 Hz and a wavelength of 1.5 m?
(825 m/s)

- 2) What is the wavelength of a sound wave traveling at 340 m/s with a frequency of 60 Hz?
(5.66 m)
- 3) What is the frequency of a pendulum that is moving at 10 m/s with a wavelength of 0.5 m?
(20 Hz)
- 4) A wave with a frequency of 30 Hz travels through rubber with a wavelength of 0.4 m.
What is the speed of the wave? (12 m/s)
- 5) What can be said about the wave speed of all electromagnetic waves?
- 6) Determine the frequency of a microwave that is 0.15 m in length. (2×10^9 Hz)
- 7) Calculate the wavelength given the frequency of an electromagnetic wave of 5.46×10^{14} Hz. (5.49×10^{-7} m)
- 8) Calculate the frequency of light with a wavelength of 4.50×10^{-10} m. (6.67×10^{17} Hz)
- 9) If violet light has a frequency of 6.60×10^{14} Hz. What is its wavelength? (4.54×10^{-7} m)
- 10) Orange light has a wavelength of 5.97×10^{-7} m. What is its frequency? (5.03×10^{14} Hz)

Physics Concept: Mixed Practice

- 1) A wave in a string has a wavelength of 0.18 m and a frequency of 16 Hz. Calculate the speed of the wave. (2.88 m/s)
- 2) An earthquake generates very low frequency waves of about 0.050 Hz. If they travel at 8000 m/s, what is their wavelength?
(16,000 m)
- 3) A basketball player makes 5 free throws in 20 seconds. Find the period and frequency. (4 s, 0.25 Hz)
- 4) A child makes takes 0.5 seconds to make 1 complete swing. Find the period and frequency. (0.5 s, 2 Hz)
- 5) A period of 13 seconds is equivalent to what frequency? (0.07 Hz)
- 6) A frequency of 0.45 Hz is equivalent to what period? (2.22 s)
- 7) Determine the frequency of a radio wave with a wavelength of 400 m. (7.5×10^5 Hz)
- 8) Determine the wavelength of a Gamma ray with a frequency of 5.2×10^{20} Hz. (5.77×10^{-13} m)
- 9) Describe how light interacts with different types of material.
- 10) Provide an example of somethings that are transparent, translucent and opaque to visible light.