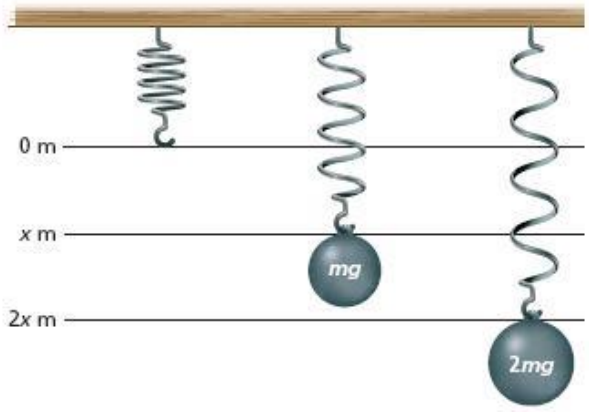
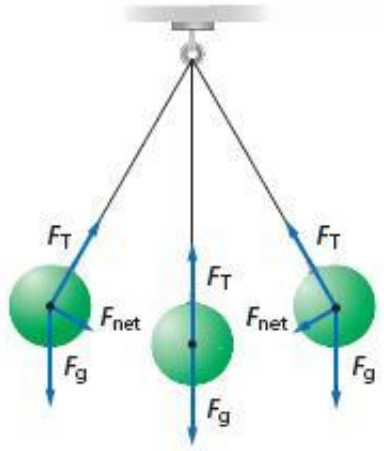
# Chapter 12 Test Review

1. The formula represents the period of a pendulum, T. What is the period of a 3.5 m-long pendulum on Earth?
2. In the figure below, if the spring's constant is 20.0 N/m and x has a value of 0.25 m, what is m equal to?

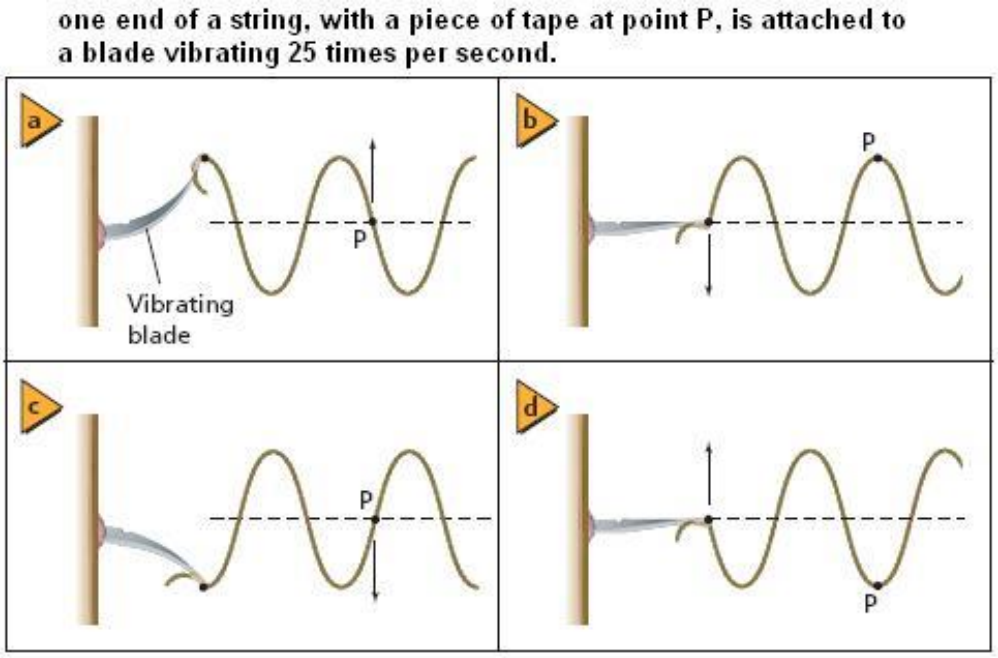



3. In the figure below, if you doubled the mass of the pendulum, what effect, if any, would it have on its period?

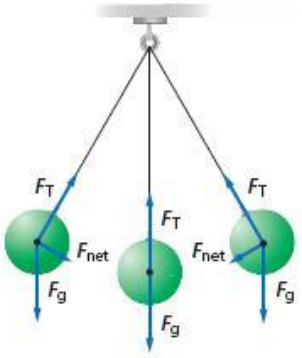



4. If a wave's frequency increases, its period _____.
5. Mechanical waves require _____.
6. The _____ of a wave can be used to determine how much energy is being transferred by the wave.
7. What does a wave carry?
8. What mathematical expression relates frequency to period?

9. In the figure below, how much time elapses between pictures **a** and **c**?

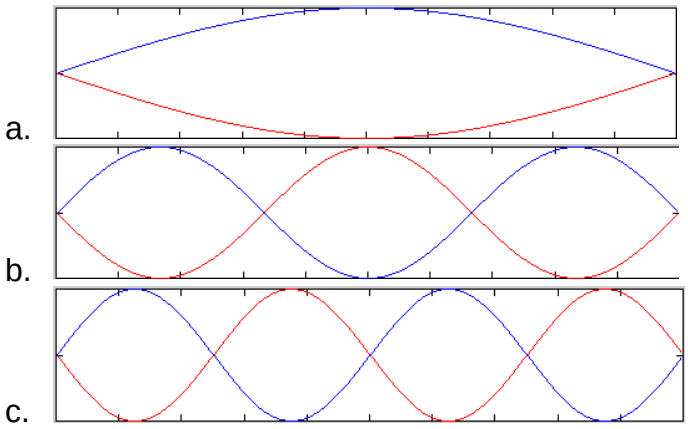



10. In the figure below, if you quadrupled the length of the string, what effect, if any, would it have on its period?




11. A wave with a frequency of 10 Hz and a wavelength of 2 m has a speed of _____.
12. Longitudinal waves move in a position _____ to the direction of the wave motion.
13. Transverse waves move in a position _____ to the direction of the wave motion.
14. Earthquakes produce _____ waves

15.




a) a's frequency is twice c's
b) a's frequency is four times c's
c) a's frequency is half of c's
d) a's frequency is one-quarter of c's

16. A trough is _____ of a wave.
17. A pulse traveling along a bullwhip is an example of a _____ wave.
18. The speed of a wave depends on the _____.
19. Waves become inverted if they reflect off a medium that is _____ than the initial medium. (Hint: Echoes are almost always inverted)
20. The principle of superposition states that _____.
21. The superposition of waves with equal but opposite amplitudes causes _____.
22. When a wave pulse strikes a wall, it reflects back and is _____.
23. Draw a transverse and longitudinal wave and label the parts of the waves.
24. A wave generator produces 15 pulses in 5 seconds (Show work and include units). What is its frequency? What is its period?
25. Assuming wave B has an amplitude of 4 m and wave A has an amplitude of 3 m (Show work and include units):
    a. What would the resulting amplitude be if wave B and wave A *constructively interfered*?
    b. What would the resulting amplitude be if wave B and wave A *destructively interfered*?
26. What is the speed of a wave that has a frequency of 320 Hz and a 0.26 m wavelength? (Show work and include units.)