Name: _____ Practice Ph11 4-1

1. Which wave below has the greatest wavelength?

a) 

b) 

c) 

d) 

2. When light from a distant star is viewed through the aperture of a telescope, the image is spread out due to _____ from the edges of the aperture.

3. Which of the following statements is true?
   a) The diffraction of light and sound is unrelated.
   b) Light diffracts more than sound
   c) Sound diffracts more than light
   d) Sound and light both diffract the same amount

4. What conditions will produce maximum diffraction through an opening in a barrier?
   a) Short wavelength and large opening
   b) Long wavelength and large opening
   c) Short wavelength and small opening
   d) Long wavelength and small opening

5. Which of the following statements is not true?
   a) Diffraction is the change in direction when waves pass from one medium to another
   b) Diffraction is the dending of waves around a corner
   c) Minimum diffraction is produced by short wavelenghts and large openings
   d) Diffraction is caused when waves pass through an opening in a barrier

6. As you move away from a light source, the wavelength of the light
   a) increases
   b) decreases
   c) decreases in amplitude
   d) stays the same

7. As you move away a light source the light you see will have a
   a) lower frequency and longer wavelength
   b) higher frequency and shorter wavelength
   c) lower frequency and shorter wavelength
   d) higher frequency and longer wavelength

8. A wave has a frequency of 50 Hz. The period of the wave is
   a) 20 s
   b) 0.020 s
   c) 0.20 s
   d) 2.0 s

9. What is the frequency of a water wave that has a speed of 0.4 m/s and a wavelength of 0.02 m?
   a) 0.05 Hz
   b) 0.008 Hz
   c) 20 Hz
   d) 10 Hz

10. Radio astronomers detect radio waves at a frequency of 660 Hz. Given that radio waves travel at the speed of light (3.0×10^8 m/s), the wavelength of these radio waves would be:
   a) 1.98×10^{14} m
   b) 2.2×10^{-6} m
   c) 4.55×10^{3} m
   d) 4.55×10^{5} m

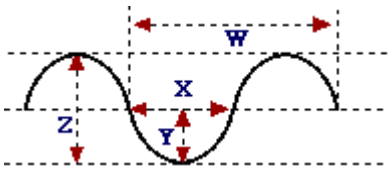
11. An electromagnetic wave has a frequency of 2.90×10^{14} Hz. What is the wavelength of the wave?
   a) 1.03×10^{-6} m
   b) 2.61×10^{-21} m
   c) 9.60×10^{-7} m
   d) 8.70×10^{22} m

12. The number of wave crests passing a point per second is called
   a) period
   b) wavelength
   c) amplitude
   d) frequency
   e) velocity

13. The time for two successive wave crests to pass a given point is called
   a) wavelength
   b) velocity
   c) period
   d) frequency
   e) amplitude

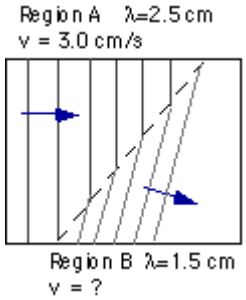
14. The distance between two successive wave crests is called
   a) wavelength
   b) frequency
   c) amplitude
   d) period
   e) velocity

15. From the diagram at right which lengths represent the wavelength and the amplitude, in that order?



a) W and Y
b) X and Z
c) W and Z
d) X and Y

16. What is the speed of waves in Region B in the diagram shown below?



a) 5.0 cm/s
b) 1.8 cm/s
c) 0.6 cm/s
d) 3.0 cm/s

17. A wave moves obliquely from shallow to deep water. What will you notice about the wave's new direction, speed, and wavelength in this order?
a) Bends towards the normal, increase and increase
b) Bends away from the normal, increase and increase
c) Bends towards the normal, increase and decrease
d) Bends away from the normal, decrease and increase

18. When a wave reflects obliquely off a barrier, how is the angle of incidence and reflection related to each other?
a) The angle of reflection is twice as great as the angle of incidence.
b) The angle of reflection is greater than the angle of incidence.
c) The angle of reflection is less than the angle of incidence.
d) The angle of reflection is equal to the angle of incidence.

19. When straight waves are incidented on a parabolic reflector, they reflect to form a
a) focal point
b) standing wave
c) node
d) focal plane