Name:

Date:

Final Review: Mechanical waves

**Matching**

A. Diffraction B. Reflection C. Refraction D. Polarization

E. Frequency F. Wavelength G. Period H. Inversely

J. Directly K. Interference

\_\_\_\_\_1. The time it takes for one complete wave cycle to occur.

\_\_\_\_\_2. The number of wave cycles to occur per unit of time.

\_\_\_\_\_3. The length of one complete wave is a measure of \_\_\_\_\_\_\_\_\_\_\_\_\_.

\_\_\_\_\_4. Frequency is \_\_\_\_\_\_\_\_\_\_related to both period and wavelength.

\_\_\_\_\_5. Wavelength is \_\_\_\_\_\_\_\_\_\_ related to period.

\_\_\_\_\_6. The bending of a sound wave around a door is known as \_\_\_\_\_\_\_\_\_\_\_\_\_.

\_\_\_\_\_7. The bending of light wave as it travels from air to water at an angle is known as \_\_\_\_\_.

\_\_\_\_\_8. The bouncing back of a Yoder’s sound wave off an adjacent alpine slope.

\_\_\_\_\_9. The filtering of light that only allows one orientation of a light wave to pass is known as \_\_\_\_\_\_\_\_.

\_\_\_\_\_10. Constructive and destructive \_\_\_\_\_\_\_\_\_ will occur when two waves momentarily superimpose each other.

**Multiple Choices**

\_\_\_\_10. The molecules of a wave travel parallel to the motion of the wave. This wave is known as a \_\_\_\_\_\_\_\_\_\_ wave.

1. Transverse
2. Longitudinal
3. Surface
4. S

\_\_\_\_\_11. Sound waves can be classified as

1. A longitudinal mechanical wave
2. A transverse mechanical wave
3. A longitudinal electromagnetic wave
4. A transverse electromagnetic wave

\_\_\_\_\_12. According to the law of reflection, if a light wave hits a mirror at 37°, then

1. the reflected angle will also be at 37°.
2. the reflected angle will be at 53°.
3. the reflected angle will depend on the optical density of the medium
4. the reflected angle will rest along the normal line.

\_\_\_\_13. A wave with an amplitude of -3 cm meets a second wave traveling in the opposite direction with an amplitude of -6 cm. When the two waves meet it can be said that,

1. The two waves will combine an move off together.
2. The two waves will momentarily superimpose on each other and create a wave with a -3 cm amplitude.
3. The two waves will momentarily superimpose on each other and create a wave with a -9 cm amplitude.
4. The two waves will destructively interfere with each other.

\_\_\_\_\_14. When devilishly passing notes, old school style, you can perfectly time the appropriate moment to transfer the paper due to the Doppler Effect. If your teacher is walking around the room, you know when she is coming towards you because… (P.S. You would never look for her, because scanning the room is a definite tell that you are up to no good)

1. There is an apparent increase in the frequency of the sound of her high heels hitting the ground as she nears you.
2. There is an apparent decrease in the frequency of the sound of her high heels hitting the ground.
3. Your teacher sends out detectable red shifted light
4. Your teacher’s gravitational force is so large everyone becomes pulled towards her.

**Free Response: Box your Answers**

15. A fishing bob bounces up and down 7 times every 2 seconds. What is the frequency of the bounce?

B. If the wavelength is 2 m, what is the speed of the wave?

16. A firecracker is set off in honor of summer. If you hear the crack 0.7 s after you see the light flash, how far away was the firecracker. (Speed of sound in air = 343 m/s)