

Spring Final Review 1

OK—getting ready for the final. Either use the notes I've given you, the book, the Internet, whatever. If you have to take the final—take this seriously! Learn it!

1. Process of a gas turning to a liquid:
2. Process of a liquid turning to a solid:
3. Process of a solid turning to a gas and bypassing the liquid phase:
4. Process of a liquid turning to a gas:
5. Fill in the following table for the following harmonic motion and wave quantities.

Symbol	Variable Name	Units	What is it?
λ			
v			
f			
T			
D			
A			
dB			

6. What is the speed of sound?
7. A. Is the speed of sound generally greater in liquids or in solids?
B. Is the speed of sound generally greater in liquids or in gases?
C. In which of these materials would sound have the fastest speed: air, water, wood, metal?
8. A. Put these in order of lowest to highest frequency:
x-rays; radiowaves; ultraviolet rays; infrared waves; visible light.

B. As light changes color it changes: frequency, wavelength, or amplitude?
9. If a sound wave has a frequency of 100 Hz, find its wavelength.
10. If the frequency of the above sound doubles, by what factor does the wavelength change?
11. A bolt of lightning flashes in the night sky! If it takes 3.5 seconds for the thunder to get to you, how far away is the impending storm?
12. A) Draw a convex and a concave lens in the space below.
B) Label them as convergent or divergent.
C) Draw three parallel rays coming in to them from the left.
D) Label their focal points as real or virtual.

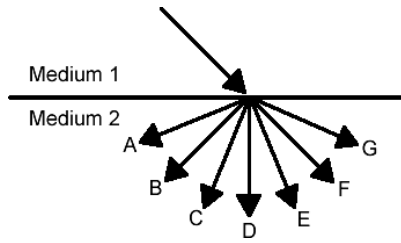
Convex lens

Concave lens

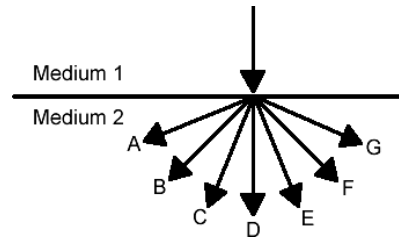
13. Which of the above lenses can produce a real image?
14. What do we call a ray of light bending when it changes from medium to another?

Spring Final Review 1

15. In the picture below, if medium 1 is air ($n = 1.00$) and medium 2 is water ($n = 1.33$),
- In which substance does water have a faster speed?
 - Which path will the light ray take?



16. In the picture below, if medium 1 is water ($n = 1.33$) and medium 2 is air ($n = 1.00$), which path will the light ray take?



17. There are two color schemes. Fill in the following comparison table.

Question	RGB	CMYK
What do the letters stand for?		
Uses lights or paints?		
What color is the background?		
How do you make white?		
How would you make cyan?		
How would you make blue?		

18. What is electricity?
19. So, in metal conductors (wires) what is moving when a battery is connected?
20. A. Which allows more water to flow: thin or thick pipes?
 B. Which has more resistance: thin or thick wires?
21. A. Is your house wired in series or in parallel?
 B. How can you prove it?