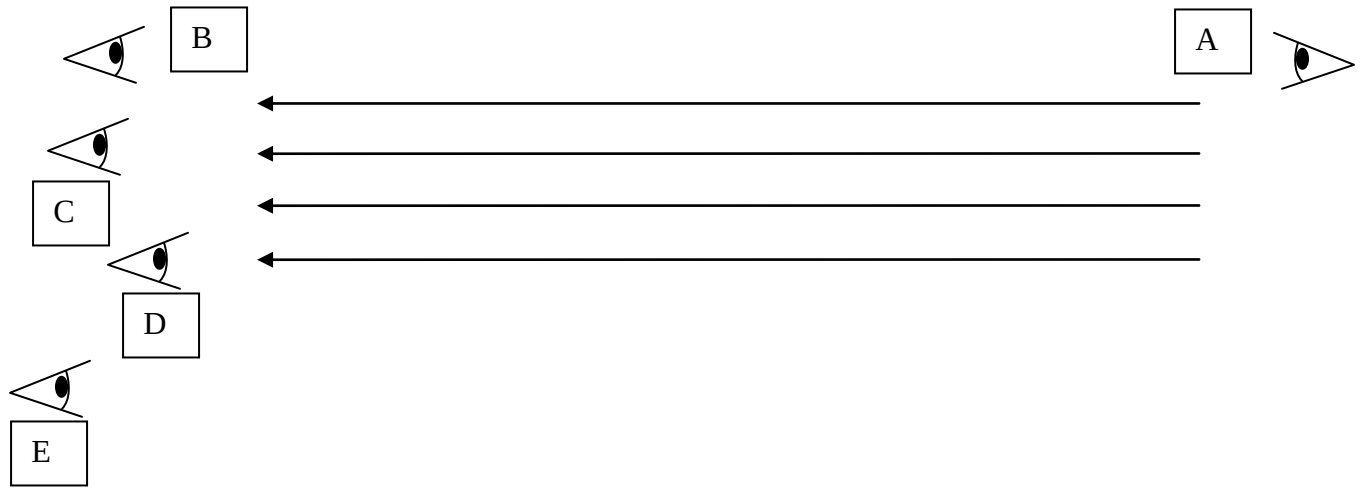
Physics 322 WS1

Consider the following situation; light is traveling to the left in a monochromatic collimated beam.

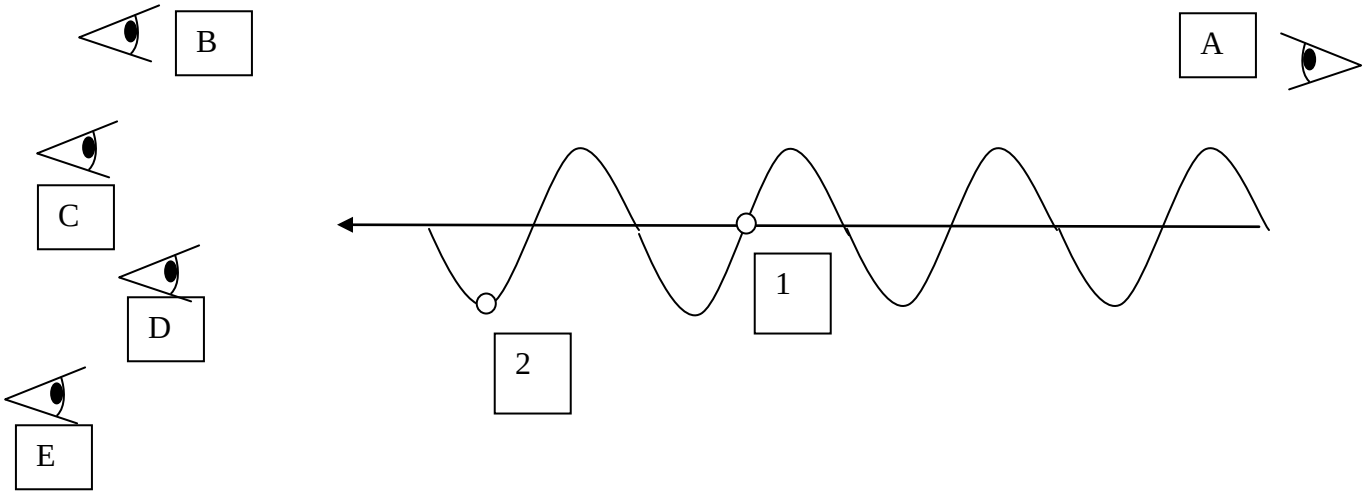


Which observer (A-E) could see the light beam?

Now, suppose we doubled the intensity of the light beam. How would this change the diagram?

How would this change what the observers see?

Imagine that we were to represent this light beam as a wave:



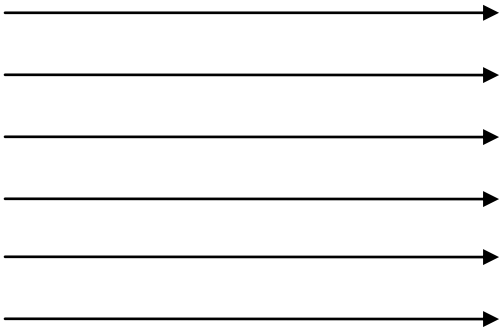
Which observer can see the light beam?

How would you change your answer if you were to double the amplitude?

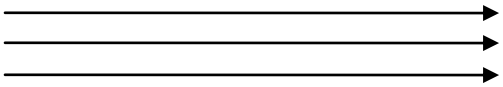
What would an observer see if they were at location 1? What about location 2?

Suppose you had two ray diagrams that looked like those shown in the figure below.

A



B



How would the power of the light represented by the two diagrams compare?

How would the intensity of the light represented by the two diagrams compare?

How does the intensity of the light vary with position along the beam of light?

Suppose you were to use the wave representation of this light. Sketch an appropriate wave for each on the grids below.