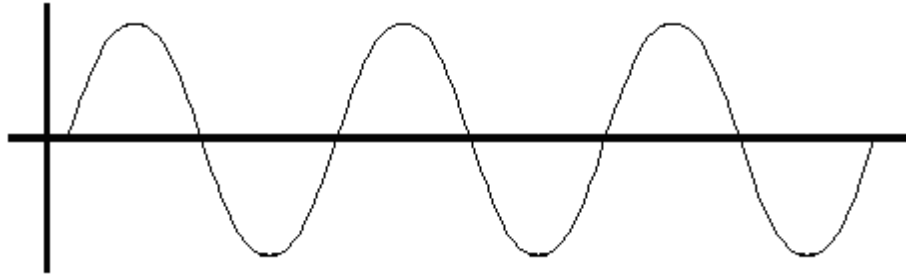**Physics 11 Waves & Light Practice Unit Test**   Name:_____

Block: _____

1. The transverse wave below is going at such a speed that a particular point marked on the string moves a total distance of 0.70 m in 0.80 s.

    a. Find the wavelength and amplitude of the wave below. (2)
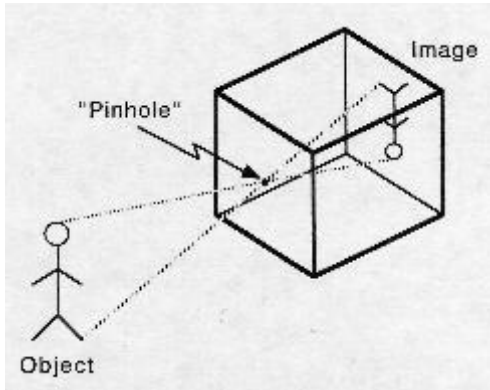

    b. What is the frequency of the wave? (2 marks)

    c. What is the period of the wave?(2 marks)

    d. What is the speed of the wave?(2 marks)

2. On the diagram below, draw the resultant wave as a result of the superposition of the two waves (2 marks)
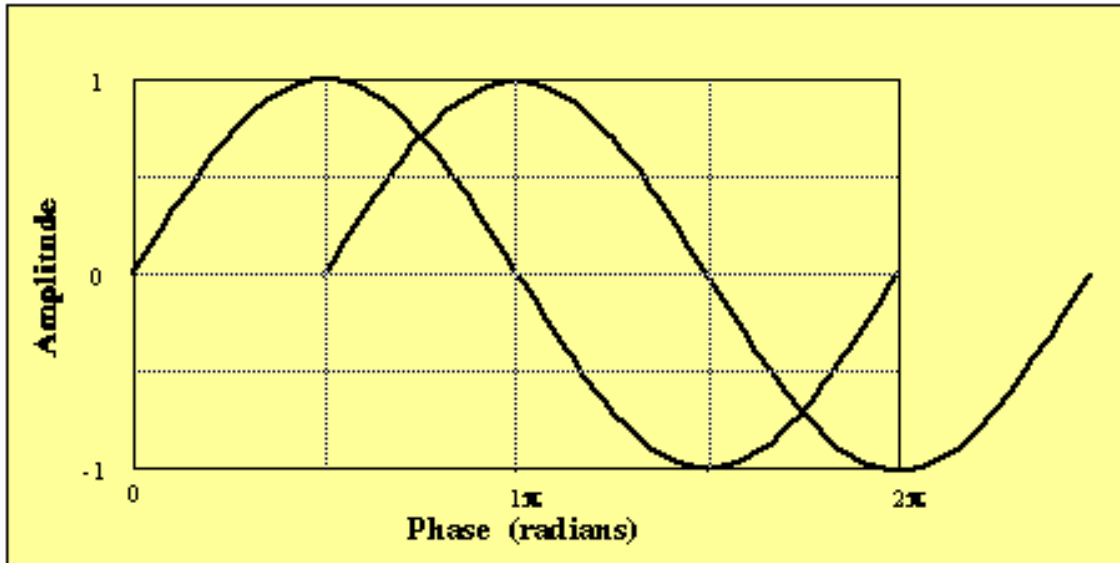
3. Draw a standing wave and identify a node and an antinode (2 marks)

4. A 1.8 m man is 12 m away from a pinhole camera. The length of the pinhole camera is 5.5 cm.


a. What is the height of the image formed in the camera? (2 marks)

b. What is the magnification of the image formed in the camera? (2 marks)

5. A fire alarm is ringing at NDSS with a frequency of 1200 Hz.

   a. What frequency do the men on the fire engine hear as they drive towards the school at 40.0 m/s.

   b. What frequency does the kid who pulled the alarm hear if he was running away at 10.0 m/s?
   (2 marks)

6. Light ray enters a block of amber (n=1.55) at an angle of 35.0°. The block is in water (n = 1.31)

35.0°
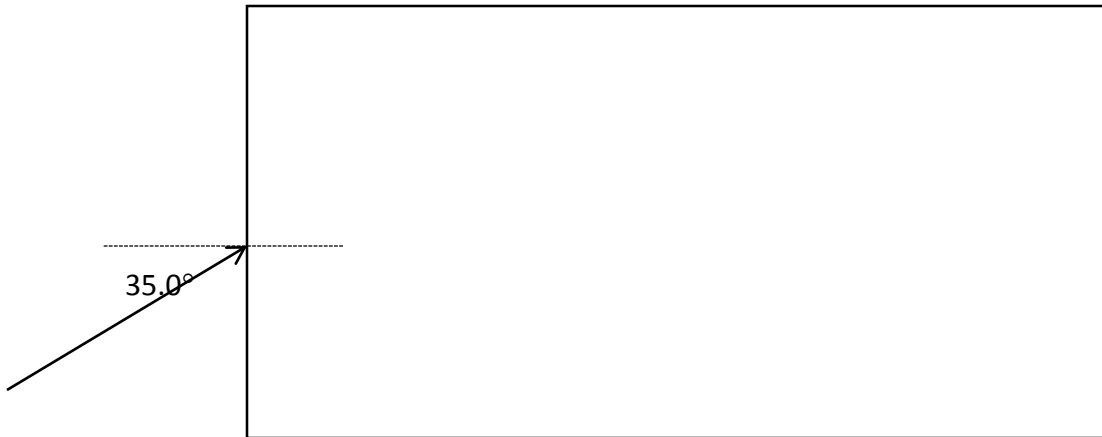
     a. Where does the light exit the block? Make certain you draw ALL rays and ALL normal lines, and label ALL angles with respect to normal. Show all necessary calculations below
(6 marks)

     b. At what angle does the light exit the block? Label all information on the diagram(2 marks)

7. An object that is 2.0 cm tall is 4.0 cm in front of a convex mirror having a 10.0 cm radius.

    a. Find the image using a ray diagram

The image appears:

1) Location:_____

2) Orientation:_____

3) Size:_____

4) Image type:_____

    b. Determine the height of the image and the distance from the mirror to the image mathematically.

8. An object that is 2.0 cm tall is 4.0 cm in front of a concave lens having a 1.0 cm focal length.
    a. Find the image using a ray diagram

The image appears:

5) Location:_____

6) Orientation:_____

7) Size:_____

8) Image type:_____

    b. Determine the height of the image and the distance from the mirror to the image mathematically.