

Reflection of Waves at a Boundary

Reflection/Transmission

1.

- a. In the box below, draw the pulse as it returns after reflecting from a fixed end.



- b. Draw the pulse as it returns after reflecting from a free end.



2.

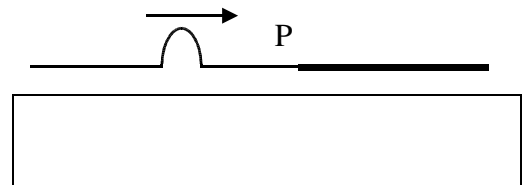
- a. Draw the pulse as it returns after reflecting from a fixed end.



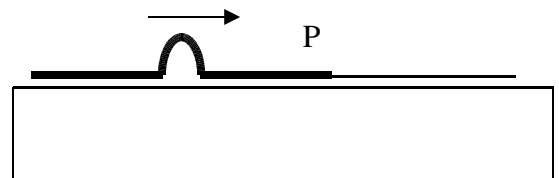
- b. Draw the pulse as it returns after reflecting from a free end.



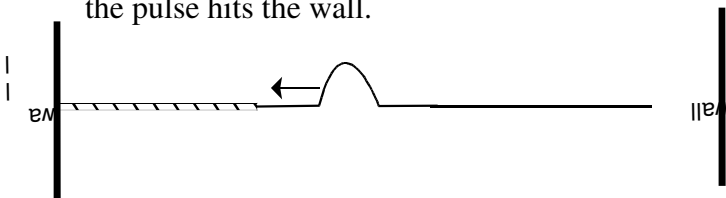
3. The diagram to the right shows a pulse traveling from a “light” string to a “heavy” string. In the box below, draw the reflected and transmitted pulses after the original pulse has reached point P.



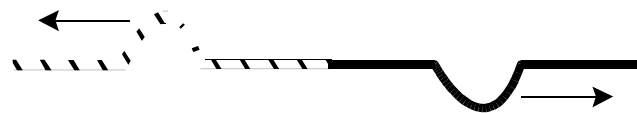
4. The diagram to the right shows a pulse traveling from a “heavy” string to a “light” string. Draw the reflected and transmitted pulses after the original pulse has reached point P.



5. Below is a pulse in a light rope approaching a heavy rope. Sketch the two rope system just after the pulse hits the wall.



6. To the right is a two-rope system soon after a pulse arrived at the center.



- a) If the right rope is the heavy rope, what did the system look like just after the system was shaken? In other words, show with a sketch which end was shaken and if the shake was up or down.

- b) If the left rope is the heavy rope, what did the system look like just after the system was shaken?

7. On the lines below draw the pulses as they would appear after they have completed their reflection from the end. Slanted lines, ($//$), following the barrier line represent a fixed end. Otherwise the barrier is a “free end.” Use the right half of the grid to show the reflected pulse, using the right edge as the boundary. Make your drawing at the time the leading point of the pulse reflects to the 7th box from the left. (Where the * is on the first diagram.)

