

## Physics 20 - Wave Boundary Assignment Answer Key

Assignment:  
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### **Answers - Page 296 #5-8**

(these answers are also in the back of the textbook)

5. Information from question: pulse sent from more dense to less dense medium
  - a. At Point A the pulse reaches a boundary and is both transmitted and reflected.
  - b. The pulse reflected from point A would be erect because the boundary acts like a free-end
  - c. When the transmitted pulse reaches point B it will be reflected from the wall.
  - d. The reflected pulse would be inverted because the wall is more dense than the string and is a fixed end.
6. The spring is attached to the wall. Since the pulse that returns was inverted the incident pulse must have encountered a fixed end.
7. If you want to increase the wavelength of waves in a rope you should shake it at a lower frequency.
8. Information from question: pulse sent from less dense to more dense medium
  - a. At Point A the pulse reaches a boundary and is both transmitted and reflected.
  - b. The pulse reflected from point A would be inverted because the boundary acts like a fixed-end
  - c. When the transmitted pulse reaches point B it will be reflected from the wall.
  - d. The reflected pulse would be inverted because the wall is more dense than the string and is a fixed end.

### **Answers - Page 303 #13-15**

(these answers are NOT in the back of the textbook)

13. When a wave reaches a boundary it is both transmitted and reflected. The amount of reflection is determined by the type of boundary that the wave encounters. If a wave moves from a more dense medium to a less dense medium, most of the wave will be transmitted. If a wave moves from a less dense medium to a more dense medium, most of the wave will be reflected.
14. When a pulse reaches a boundary and enters a more dense medium the reflected wave will be inverted.
15. When a pulse reaches a boundary and enters a less dense medium the reflected wave will be erect.