

**Phys 102-091**  
**Recitation 1**

Q1. A particle of a string moves up and down as a traveling sinusoidal wave passes through it. If the time for that particle to move from maximum displacement to zero displacement is 0.2 s, what is the frequency of the wave?

- A) 1.25 Hz
- B) 2.00 Hz
- C) 3.25 Hz
- D) 4.00 Hz
- E) 5.50 Hz

Q2. A string of length 50.0 m and mass of 25.0 grams is under tension of 75.0 N. An electric vibrator operating at 40.0 Hz is generating a harmonic wave in the string. The average power the vibrator can supply to the string is 500 W. What is the amplitude of the wave?

- A) 0.29 m
- B) 0.31 m
- C) 2.70 m
- D) 1.85 m
- E) 0.20 m

Q3. The length of a stretched string increases by 20% when the tension in the string is doubled. What is the ratio of the new speed to the old speed of waves on the string?

- A) 1.55
- B) 2.40
- C) 1.63
- D) 1.41
- E) 2.1