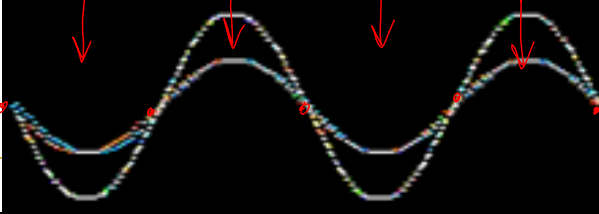Quiz 1:

Standing Wave Quiz
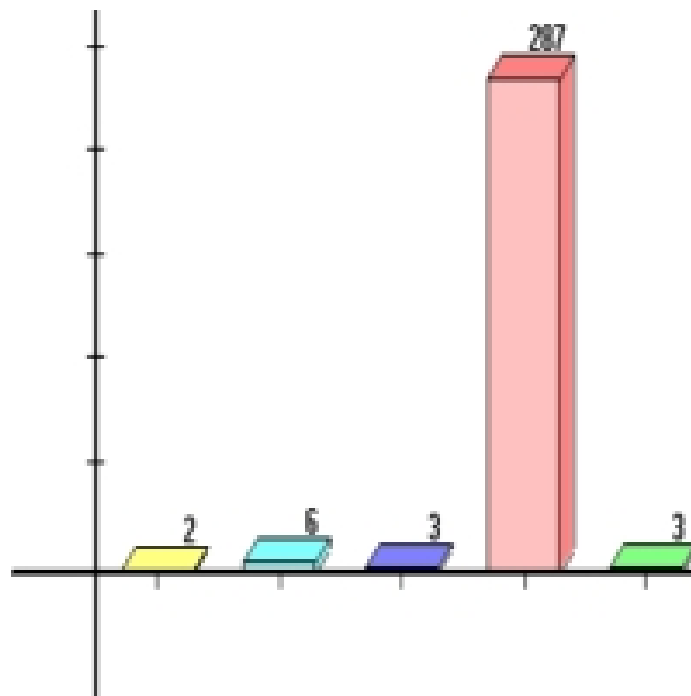
The white wave is the sum of the blue and red waves. It is the

A. Fundamental Frequency (m=1)
B. Second Harmonic (m=2)
C. Third Harmonic (m=3)
D. Fourth Harmonic (m=4)
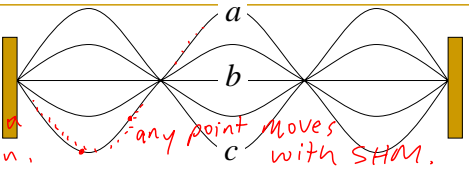E. Fifth Harmonic (m=5)

m = # of antinodes.

Class Vote:

Great result!!! Not too surprising though, I guess, as this was a masteringphysics pre-class quiz! (**Correct Answer = D**)
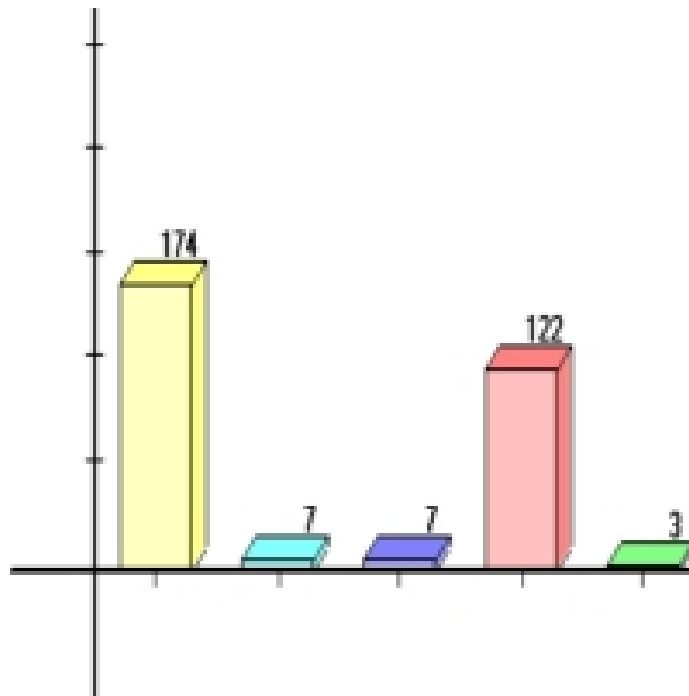
Quiz 2:

Quiz

a & c
are maxima
of motion.
... any point moves
c with SHM.

- A string is clamped at both ends and plucked so creates a standing wave. Define upward motion to be positive velocities. When the string is in position *a*, the instantaneous velocity of points along the string
- A. is zero everywhere
- B. is positive everywhere
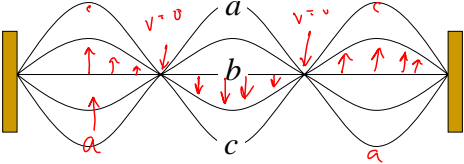- C. is negative everywhere
- D. depends on location

Class Vote:

Perhaps it was not stated very clearly that *a* and *c* are instants when the string is at its maximum displacement from equilibrium. For sinusoidal wave motion, you can think of every point on the string as exhibiting vertical SHM. So when an oscillator is at its maximum displacement, its instantaneous velocity is zero (turn-around point). (**Correct answer = A**)
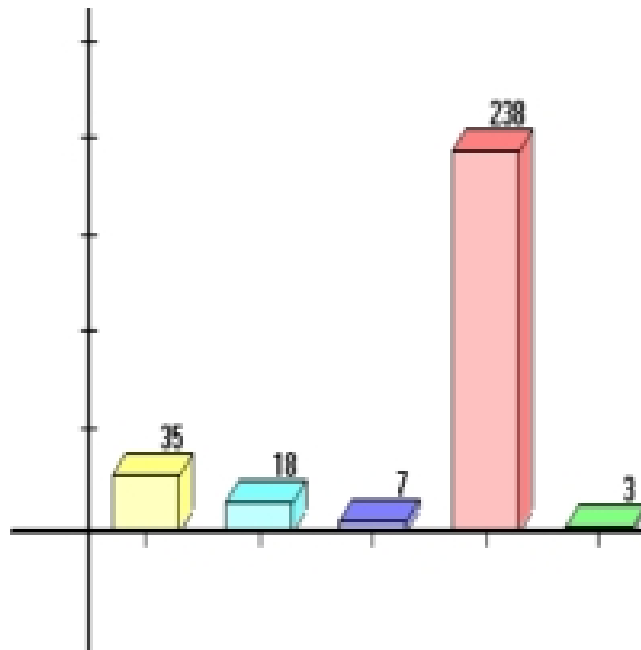
Quiz 3

Quiz

- A string is clamped at both ends and plucked so creates a standing wave. Define upward motion to be positive velocities. When the string is in position b, the instantaneous velocity of points along the string
- A. is zero everywhere
- B. is positive everywhere
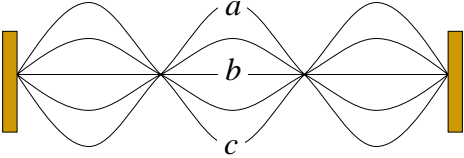- C. is negative everywhere
- D. depends on location

Class Vote:

Every part of the string exhibits vertical SHM, so when it's at equilibrium (point b), it is moving at its maximum velocity, either up or down, depending on the location along the string. (**Correct Answer = D**)
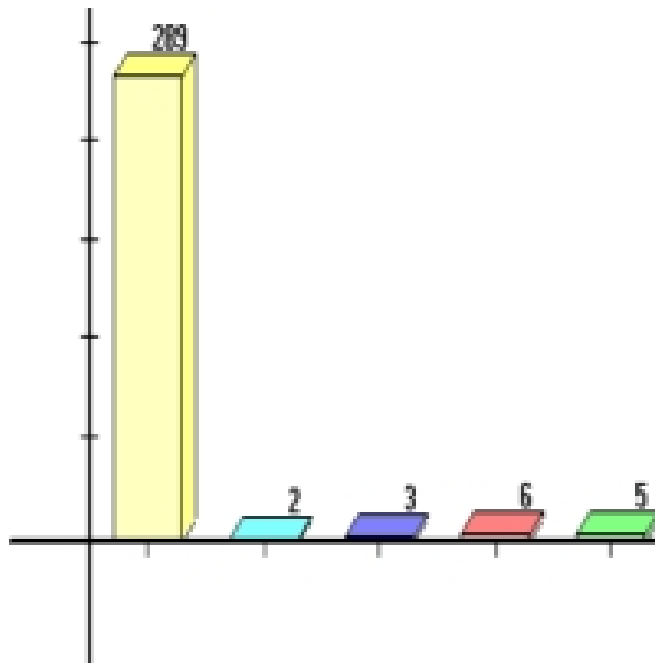
Quiz 4

Quiz

- A string is clamped at both ends and plucked so creates a standing wave. Define upward motion to be positive velocities. When the string is in position c, the instantaneous velocity of points along the string
- A. is zero everywhere
- B. is positive everywhere
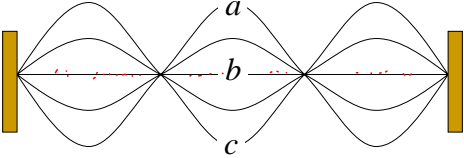- C. is negative everywhere
- D. depends on location

Class Vote:

Every part of the string exhibits vertical SHM, so when it's at maximum displacement (point a or c), it is momentarily stopped, with zero velocity. (**Correct Answer = A**)

Quiz 5

Quiz
SHM.

- A string is clamped at both ends and plucked so creates a standing wave. Define upward motion to be positive velocities. When the string is in position b, the instantaneous **acceleration** of points along the string
- A. is zero everywhere
- B. is positive everywhere
- C. is negative everywhere
- D. depends on location

b = equilibrium position

Force = Zero at equilibrium

$a = F/m = 0$.

Class Vote:
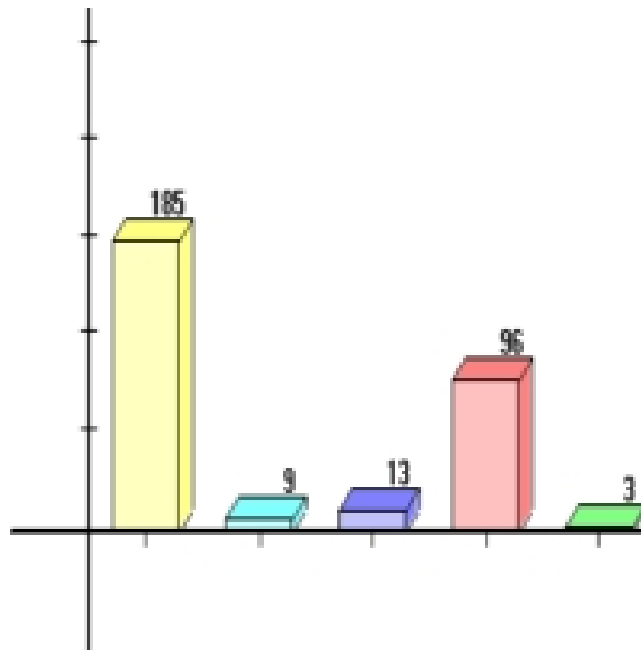
Every part of the string exhibits vertical SHM, so when it's at equilibrium (point b), the net force on it is zero, and therefore its acceleration is also zero. (**Correct Answer = A**)