

I. Periodic Wave Phenomena handout

A. Interference – effect produced by two waves passing simultaneously through a region

1. Superposition – when waves _____, the resultant displacement is the algebraic sum of the individual displacements of each wave

a. _____ Interference

1.

2.

3.

b. _____ Interference

1.

180⁰ out of phase

2.

At the moment they **overlap** the wave amplitude _____

3.

2. _____ Line of Interference

wave patterns produced by the _____ of 2 wavefronts in phase

←crest

x – destructive

o – constructive

Maximum _____ Interference - Phase Difference _____

B) Standing Wave – waves produced when two waves of the _____

and amplitude travels in _____ in the same medium (Musical instruments)

Same _____

_____ Same _____

Standing waves can also be produced by _____ (guitar string)

How many nodes? _____

How many antinodes? _____

How many waves? _____

C) Resonance – The building up of energy by adding small amounts of energy in time with the _____ frequency of an object

Resonance Frequency – _____ that an object vibrates when disturbed

D) Diffraction – the _____ into the region behind an obstacle

Amount of diffraction depends on _____ and _____

Wave / Slit / Diffraction

Large differences between _____ and _____ causes greater diffraction