Spring Term 2003
22.02 Intro. APPLIED NUCLEAR PHYSICS
Problem Set #1

1. Wave Interference:

   Give a general expression for the amplitude at point, P, as a function of, θ, in terms of the amplitude, A, of the incoming wave, the distance between the slits, d, and the wavelength, λ.

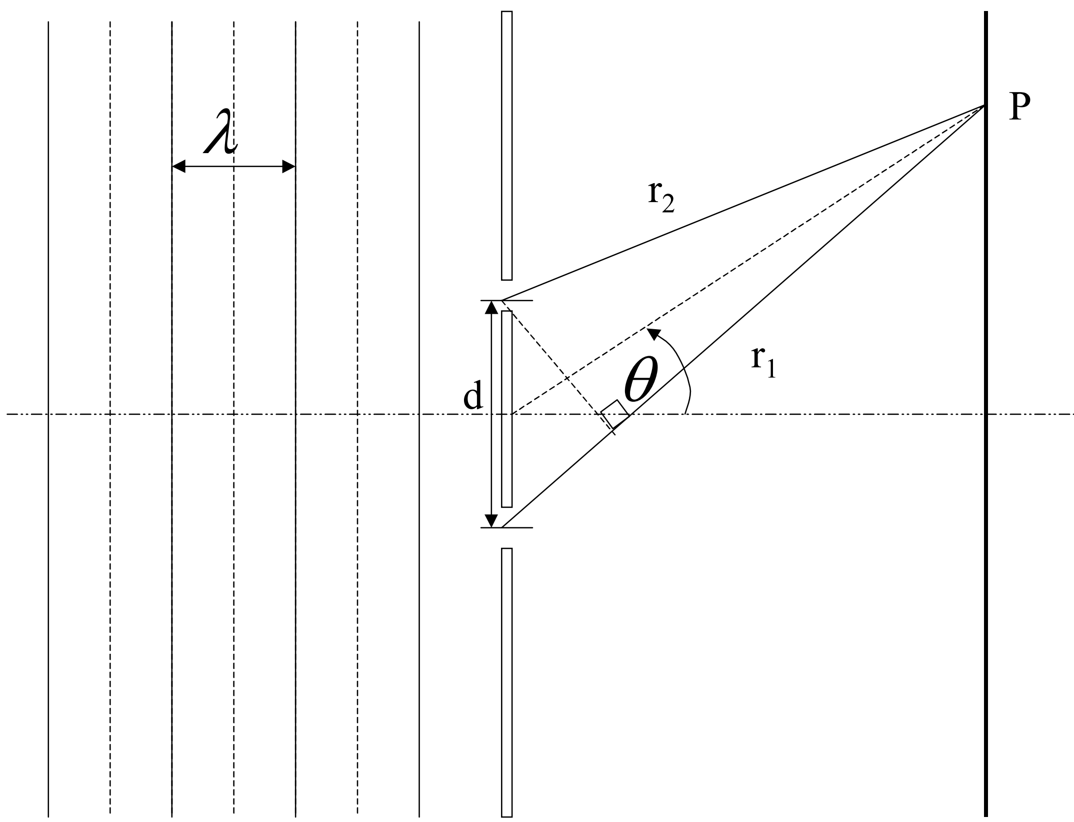

Figure 1: Wave Interference Diagram

2. The equation of a transverse wave traveling along a string is given by,

$$y = 0.3\sin[\pi(0.5x - 50t)]$$

where, y, and, x, are in centimeters and, t, is in seconds.

- Find the amplitude, wavelength, wave number, frequency, period, and velocity of the wave.
- Find the maximum transverse speed of any particle along the string.

3. Liboff, problems 3.1, 3.2, 3.3, 3.10, 3.12