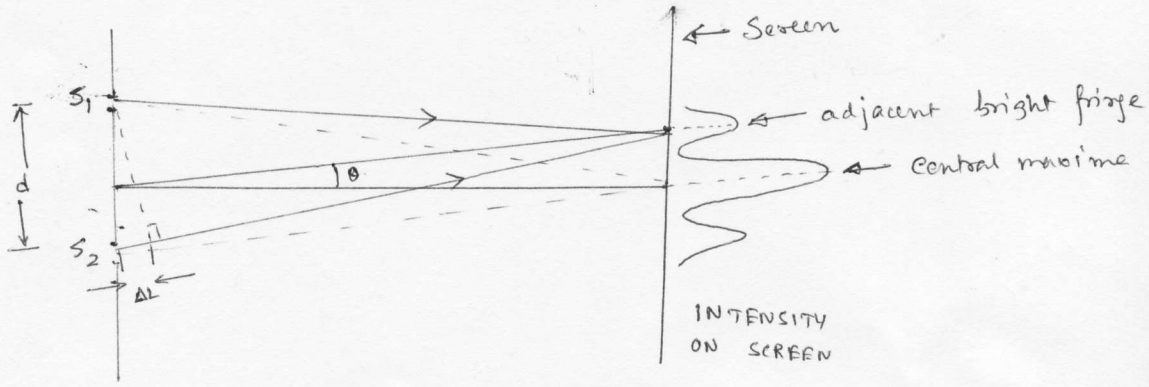
QUIZ 4

NAME: SOLUTION	Quiz #3b: Phys270 Section 0104

1. [10 pts] In a double-slit experiment, the slit separation is 100 times the wavelength of light. What is the angular separation between the central maximum and the adjacent bright fringe? Note that for small angles, $Sin(\theta) \approx \vartheta$ for $\vartheta << 1$.



$$\Delta L = d \sin\theta = d \tan\theta \quad \text{for} \quad \theta \ll 1$$

$$= d\theta$$

$$\Delta L = d\theta = \lambda \quad \text{[for adjacent bright fringe}$$

$$\therefore \theta = \frac{\lambda}{d} = \frac{1}{100}$$

Angular separation = 0.01 rad.