

- (c) Show that the phase of waves received at a point on the axis of a slit, at a distance z from the slit, varies with the distance along the aperture, y according to the equation

$$\Delta\phi = \pi y^2 / \lambda z,$$

where λ is the wavelength of the light.

[5 marks]

Hint: Use $(1 + y^2/z^2)^{1/2} \simeq 1 + y^2/2z^2$.

