

## PH 354: hw 3, problem 16

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The Transmission function  $q(u) = \sin^2(\alpha u)$   
This function is desired to have the same periodicity as the grating spacing.  
Also  $\alpha$  must have the dimension of  $[L]^{-1}$  as  $u$  has the dimension of  $[L]$ . So these arguments motivate a plausible choice of  $\alpha$ .

$$\alpha = \frac{\pi}{d}$$