

68. To explore one quadrant of the circle, we look for angles where Eq. 36-14 is satisfied.

$$\theta = \sin^{-1} \frac{m\lambda}{d} \quad \text{for } m = 0, 1, 2, \dots$$

where  $m\lambda/d$  cannot exceed unity. For  $m = 1 \dots 7$  we have solutions that are “mirrored” in every other quadrant; so there are  $4 \times 7 = 28$  of these. The solutions at  $m = 0$  and  $m = 8$  are “special” in that they have twins (at  $180^\circ$  and  $270^\circ$ , respectively) and their multiplicity is 2, not 4. Thus, we have  $28 + 2(2) = 32$  points of maxima.