28. Setting $I = 2I_0$ in Eq. 36-21 and solving for the smallest (in absolute value) two roots for $\phi/2$, we find

$$\phi = 2\cos^{-1}\left(\frac{1}{\sqrt{2}}\right) = \pm\frac{\pi}{2} \text{ rad} .$$

Now, for small θ in radians, Eq. 36-22 becomes $\phi = 2\pi d\theta/\lambda$. This leads to two corresponding angle values:

$$\theta = \pm\frac{\lambda}{4d} .$$

The difference between these two values is $\Delta\theta = \frac{\lambda}{4d} - \left(-\frac{\lambda}{4d}\right) = \frac{\lambda}{2d}$.