Solution to HW7

9.5 $\frac{ay}{d} = m\lambda, \ \lambda = 1.5cm, f = 22.9KHz.$

The reason is that the sources are out of phase.

9.7   (a) $y_1 = 1.58mm.$

(b) $y_5 = 15.8mm.$

9.10 $\lambda = 390nm.$

9.13   The source phase difference is $\delta = \frac{2\pi a\cos\theta_t}{\lambda}$ (or $\frac{2\pi a\sin\theta_t}{\lambda}$, depending on the definition of θ_t), so
$\sin\theta = \frac{m\lambda}{a} - \cos\theta_t$ (or $\sin\theta = \frac{m\lambda}{a} - \sin\theta_t$).

9.28 $\lambda = \frac{1474nm}{m}$, m=1,2,3...

9.33 $\theta = 5.05\times10^{-5}rad.$