Given,

$$x[n]=1+\sin(\frac{л}{4}\cdot n)+\sin(\frac{л}{2}\cdot n) \quad \text{and} \quad h[n]=1.9(-0.9)^n\cdot u[n]$$

taking the DTFT of h[n] and using Euler's identity yields,

$$H(\Omega)=\frac{1.9}{1-(-0.9)\,e^{-j\Omega}}=\frac{1.9\cdot e^{j\Omega}}{e^{j\Omega}-(-0.9)}=\frac{1.9(\cos(\Omega)+jsin(\Omega))}{0.9+\cos(\Omega)+jsin(\Omega)}$$

Next compute the magnitude and phase of H(Ω) for $\Omega_0 =$ 0, $\frac{л}{4}$, $\frac{л}{2}$

$$|H(0)|=\frac{1.9}{1.9}=1 \quad \text{and} \quad \angle H(0)=0$$

$$H(\frac{л}{4})=\frac{1.9\frac{\sqrt{2}}{2}+j1.9\frac{\sqrt{2}}{2}}{0.9+\frac{\sqrt{2}}{2}+j\frac{\sqrt{2}}{2}}=1.08\angle 0.371 \quad \text{or}$$

$$\left|H(\frac{л}{4})\right|=1.08 \quad \text{and} \quad \angle H(\frac{л}{4})=0.371$$

$$H(\frac{л}{2})=\frac{j1.9}{0.9+j}=1.41\angle 0.733 \quad \text{or}$$

$$\left|H(\frac{л}{2})\right|=1.41 \quad \text{and} \quad \angle H(\frac{л}{2})=0.733$$

Using equation 5.65 from section 5.5.1 on page 250 in the text book,

A = 1

$$y[n]=|H(0)|+\left|H(\frac{л}{4})\right|\sin(\frac{л}{4}n+\angle H(\frac{л}{4}))+\left|H(\frac{л}{2})\right|\sin(\frac{л}{2}n+\angle H(\frac{л}{2}))$$

$$y[n]=1+1.08\sin(\frac{л}{4}n+0.371)+1.41\sin(\frac{л}{2}n+0.733),\ n=0,\pm 1,\pm 2,\ldots$$