Solution \#9
Date assigned: 4/17/2008
Date due:
4/24/2008

## Solution 9.1

$\operatorname{SIR}=\frac{1}{6} \times\left(\frac{D}{R}\right)^{\gamma}=100 \quad \rightarrow \quad \frac{D}{R}=\sqrt[3]{600}=8.43$

## Solution 9.2

$N=i^{2}+j^{2}+i j=4$ pair of $\mathrm{i}=2$ and $\mathrm{j}=0$ gives $\mathrm{N}=4$. So,


## Solution 9.3

Propagation delay every hop $=1000 \mathrm{~km} / 300000 \mathrm{~km} / \mathrm{sec}=3.3 \mathrm{msec}$ for each hop
Number of packets $=64 / 2=32$ packets
Packet size $=(1024 * 2+32) * 8=16640$ bits
Total delay $=(\text { number of packets }+ \text { number of hops })^{*}($ packet length/line speed $)+$ total propagation delay

Total delay $=(32+2) * 16640 /(50 \mathrm{Mbps})+6.6 \mathrm{msec}=17.91 \mathrm{msec}$

