1.

: channel number, : blocking rate

is the root of Erlang B formula for given and

Thus, I use secant method to find (use liner scale for ,and use log scale for )



2.

(a)

It is possible that the total offered traffic load is larger than the number of available channels and this situation can be seen as taking , then the corresponding is 236.3944. And this is because the total offered traffic that we computed corresponds to some blocking rate .

Here I give an extreme example, choose then

Then as

The total offered traffic is much larger then 1 but almost all traffic is blocked. Thus, can’t represent the exact traffic that has been served

(b)

Depend on previous discussion, the traffic that has been served can be determined as following

3.

600 channels, reuse factor , 1 operator 120 channels per cell



600 channels, reuse factor , 2 operators 60 channels per cell per operator



600 channels, reuse factor , 3 operators 40 channels per cell per operator



It can be seen that it is more efficient if 600 channels are shared by only one operator.

I think this is due to that if the channels are shared by fewer operators, then more resources can be used by per operator. It gives more flexibility to use the channels.

Otherwise, many countries prefer that channels are shared by more than one operator may be due to market competition or other reasons that relates to market