MITNet Leaf Outage

Base data: 80% of leaf nodes experience an outage of 6 hours per month.
Assume: MTTR = 6 hrs MTTF = 1 month
** Used MTTF of 6 months for following analysis.

	MTTR (hr)	MTTF (m)	Availability	Outage (hrs/yr)	%Repair	Population	Repair Actions Per yr	Repair Actions Per mth	Device Failures	Spares
MITNet Core	4	24	99.9772%	2.0	50%	1	0.5	0		1
MITNet Leaf	6	6	99.8632%	12.0	200%	120	240.0	20		120
Router core	2	24	99.9886%	1.0	50%	6	3.0	0	0	6
Router leaf	2	24	99.9886%	1.0	50%	120	60.0	5	5	120
Bridge	2	24	99.9886%	1.0	50%	20	10.0	1	1	20
Concentrator	2	24	99.9886%	1.0	50%	660	330.0	28	28	660
Router - Mitnet Series Cabling	2	60	99.9954%	0.4	20%	126	25.2	2		126
UTP Series Cabling	2	60	99.9954%	0.4	20%	10000	2000.0	167		10000
Mission Power	1	6	99.9772%	2.0	200%	120	240.0	20		120
HQ Power	0.25	6	99.9943%	0.5	200%	1	2.0	0		1
								242	34	

Calculations (Using Lower Table)

	Availability	Outage (hrs/yr)	(hrs/m)	(min/wk)	MTTF (m)	MTTF (wks)
Local Internetwork Access	97.76%	196.0	16.3	226	0.1	1
Wide Area Internetwork Access	96.69%	289.6	24.1	334	0.1	0
Probability of Success	97.44%	224.1	18.7	259	0.1	0

Al=Ac4*Ab2*Arl*Aw8*Ap
Ar=Ac4*Ab2*Arl*Arc2*Amc*Aml*Aw8*Aws4*Apm*Aph
Ar=Al*Arc2*Akg2*Amc*Aml*Af4

Ps=PlAl+PrAr+Pn