Shared Access and Medium Networks

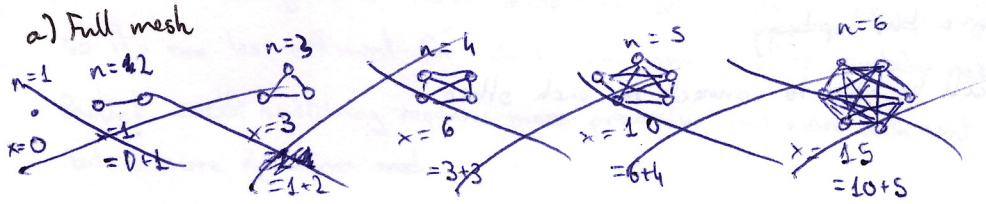
PROBLEMS

1. FUNDAMENTALS

1.1. TOPOLOGIES.

1.1.1. In a network with n devices, what is the number of links needed for these topologies?

a) Full mesh



$x(n) = (n-1)+(n-2)+\dots+(n-(n-1))+(n-n) = n\cdot n - \sum_{i=1}^{n} n = n^2 - \frac{n(n+1)}{2} = \frac{2n^2-n^2-n}{2} = \frac{n^2-n}{2} = \boxed{\frac{n(n-1)}{2}}$

b) A ring

$\boxed{n-1}$

c) A bus

$\boxed{1}$

d) A star

$= \boxed{n}$