

1. Draw a six-node full mesh network. How many connections did your drawing require? Does this agree with the formula in the text? (If not, fix your drawing!) How many connections would a fifty-node full mesh network require?

$$6 \times 5 / 2 = 15$$

$$50 \times 49 / 2 = 1225$$

2. How many connections are required for 30 nodes to be connected in a full mesh topology? (Calculation Exercise)

$$30 \times 29 / 2 = 435$$

3. Each individual link channel is characterized by a number of different properties. Some of them are a) type of medium, b) signaling method, c) directionality of signals, d) nature of the interfaces with the end nodes and with other links. What are the other properties? (Please provide the text answer, this is not a calculation exercise)

by the type of medium it uses, and by the electrical or optical properties of the medium,

by the signaling method and data formats used to carry its messages,

by the directionality of signals supported by the channel,

by the nature of its interfaces with the end nodes and with other links,

by its bandwidth,

by restrictions on the length of the channel,

by the time delay between the time the channel receives data from its incoming node and the time it releases the data to its outgoing node,

by the number of connections sharing the channel,

by the noise characteristics of the channel,

by the way in which packets are steered through the channel from link to link (see the next part of this section), and

by the electrical or optical properties of the channel.