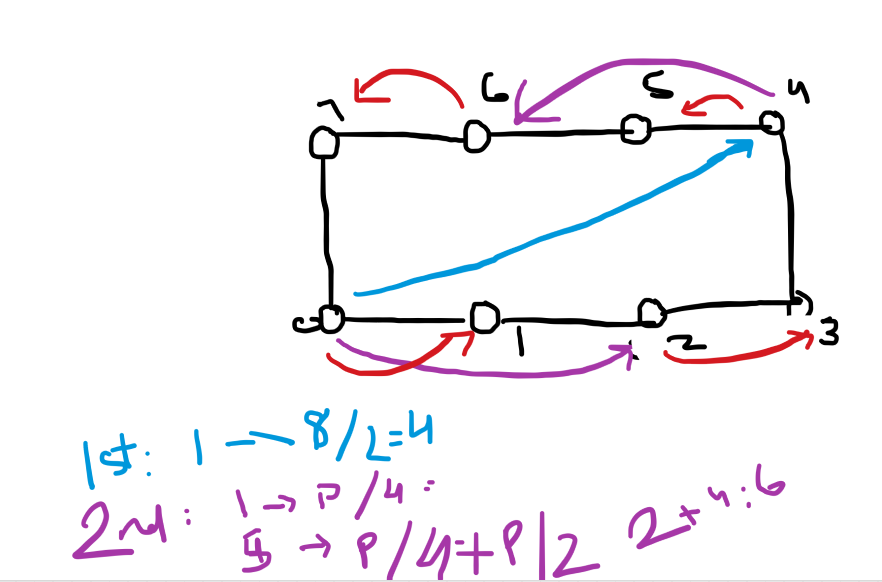
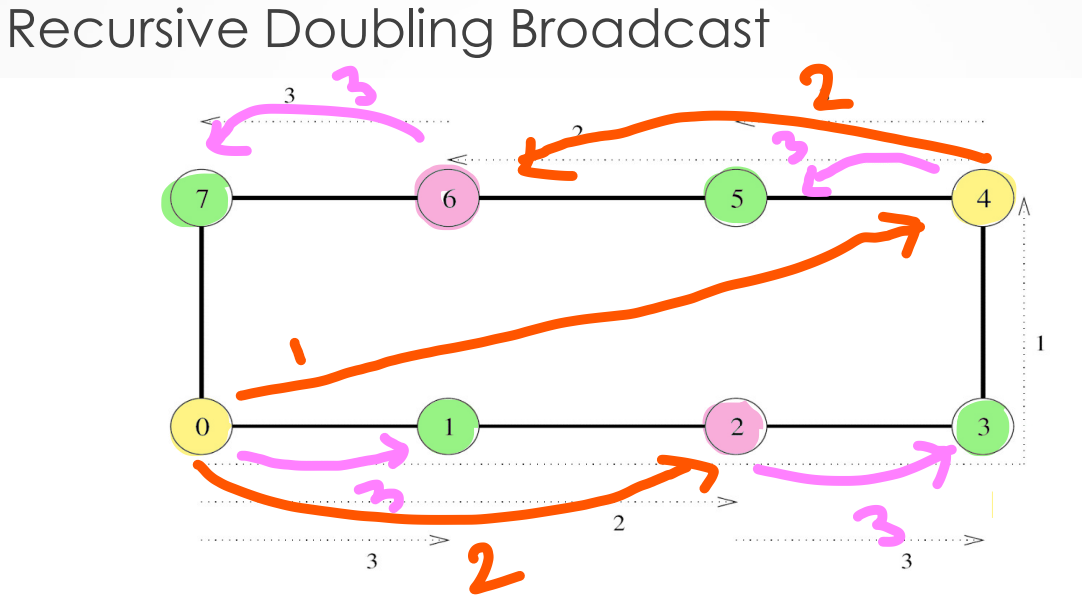
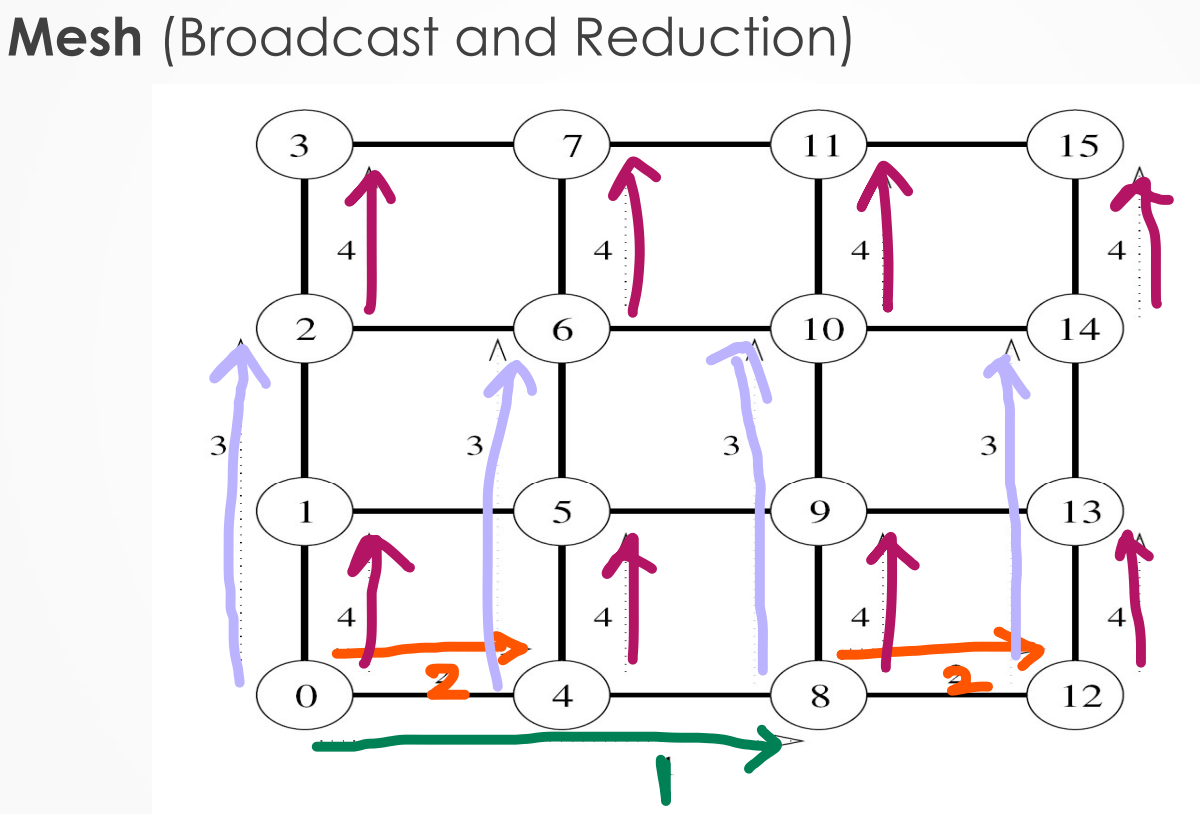
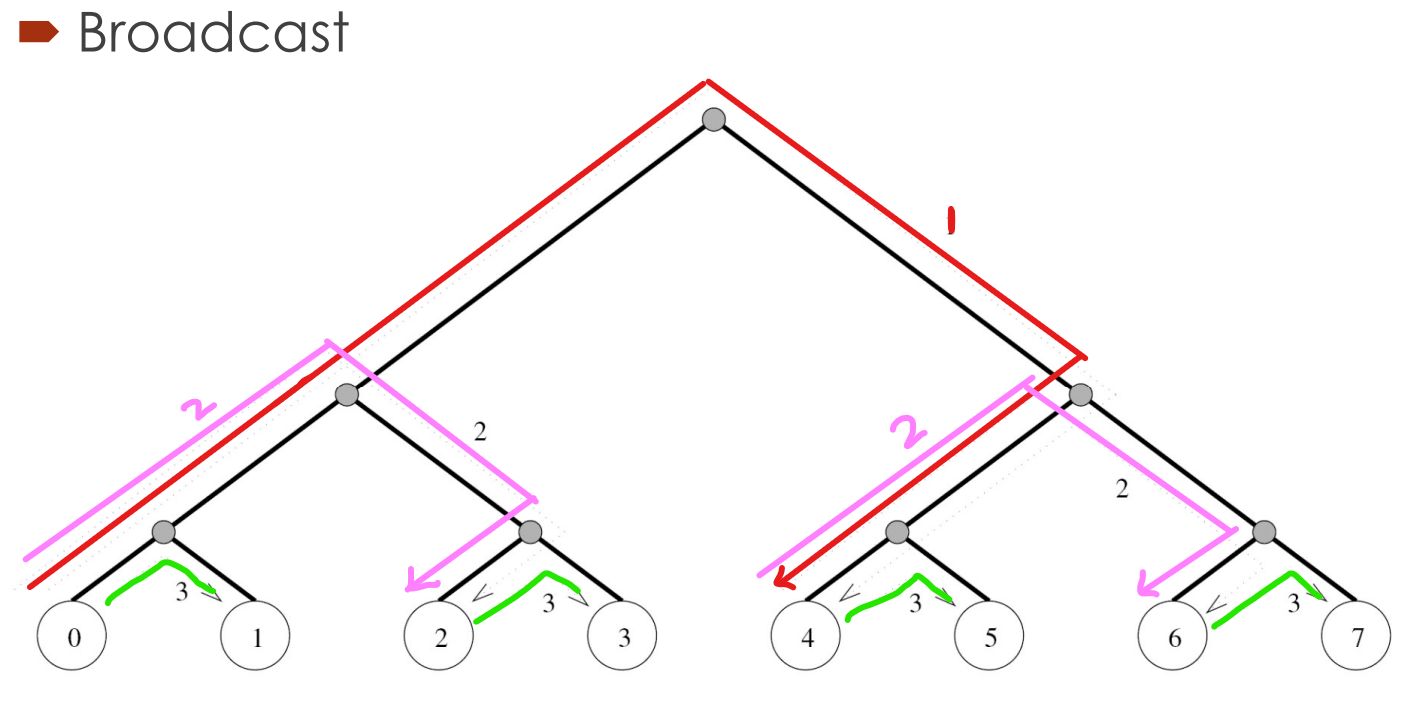
One to All Broadcast:

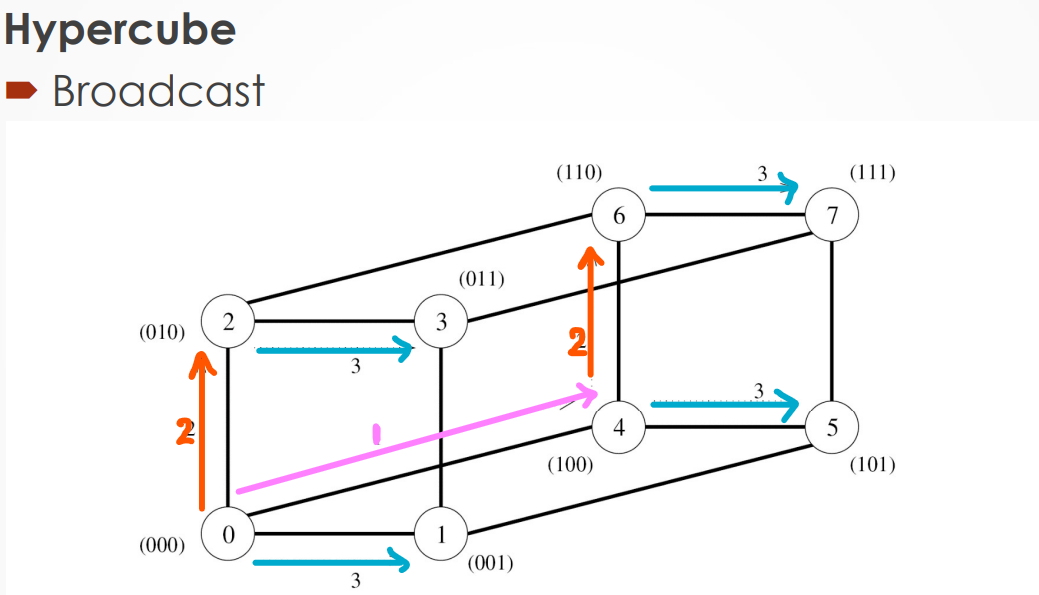




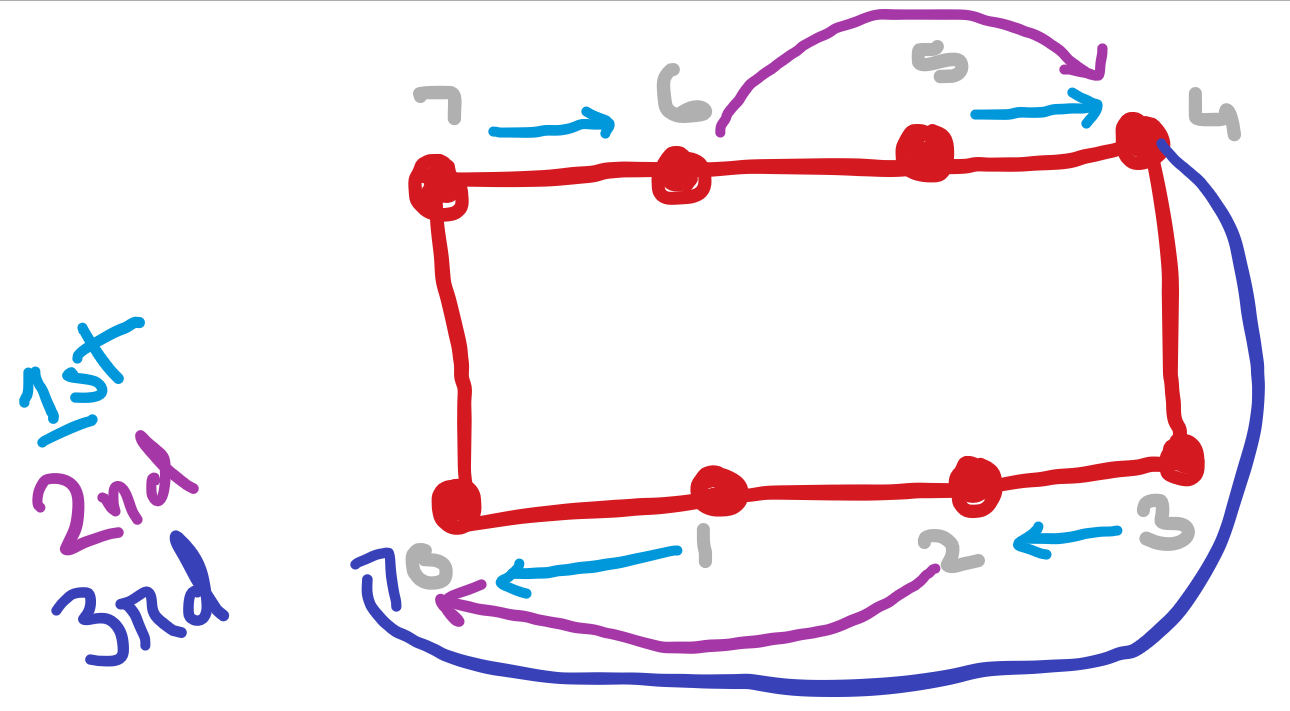
Cost: logp(ts+mtw)

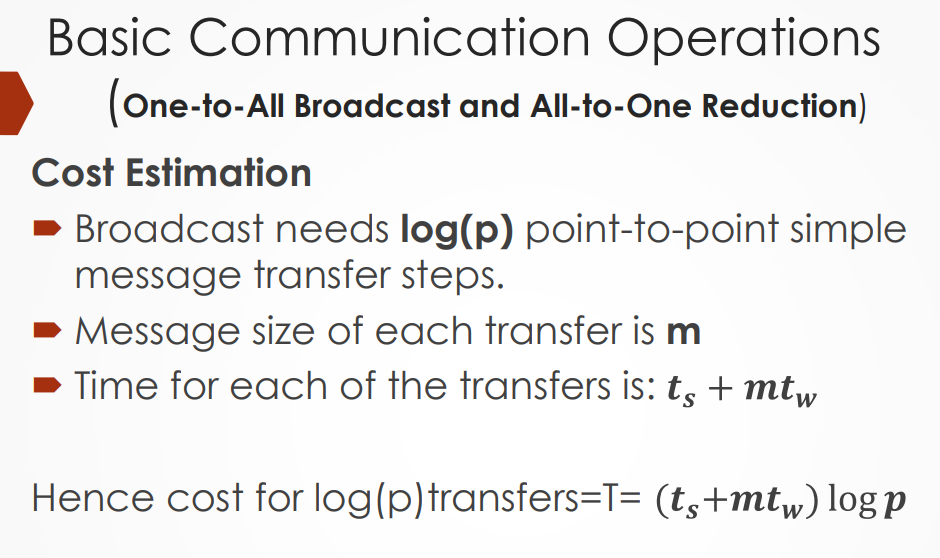






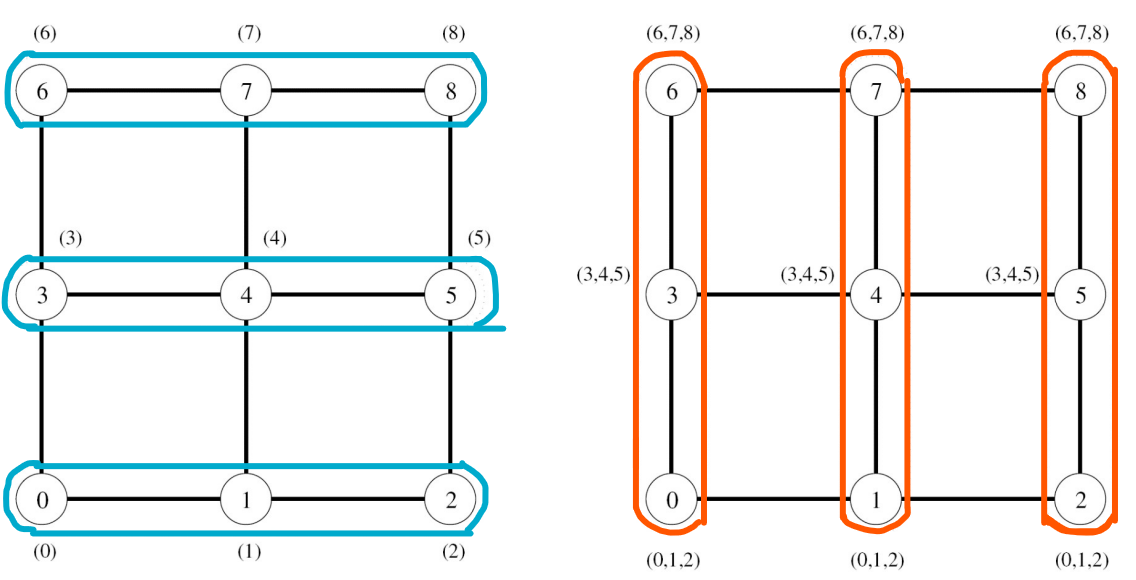
All to One Reduction:

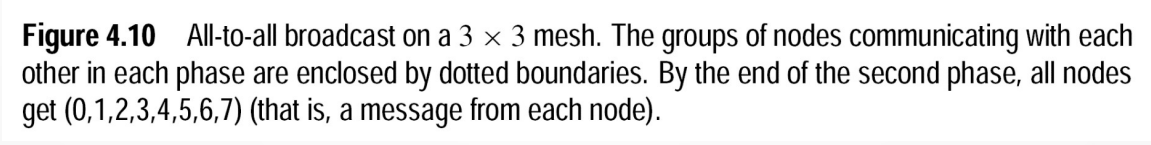


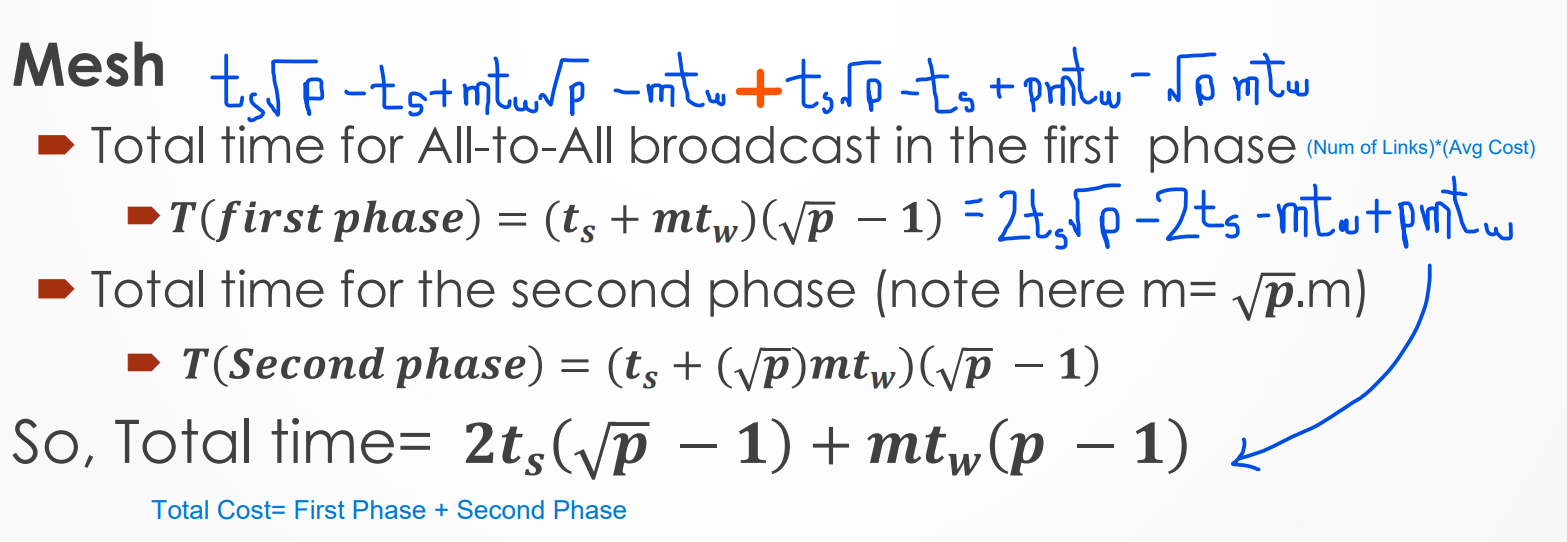


All to All Broadcast:

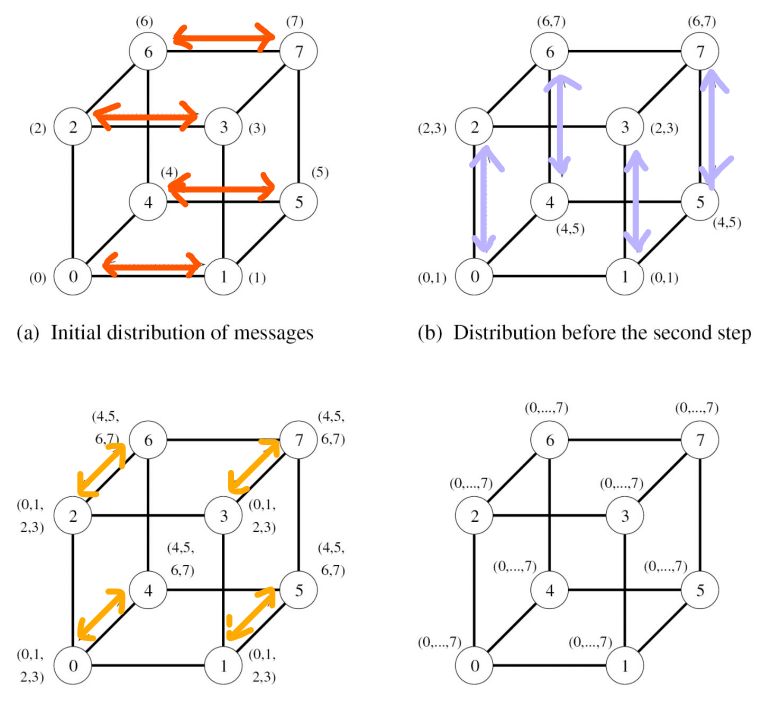
# **2D Mesh:**

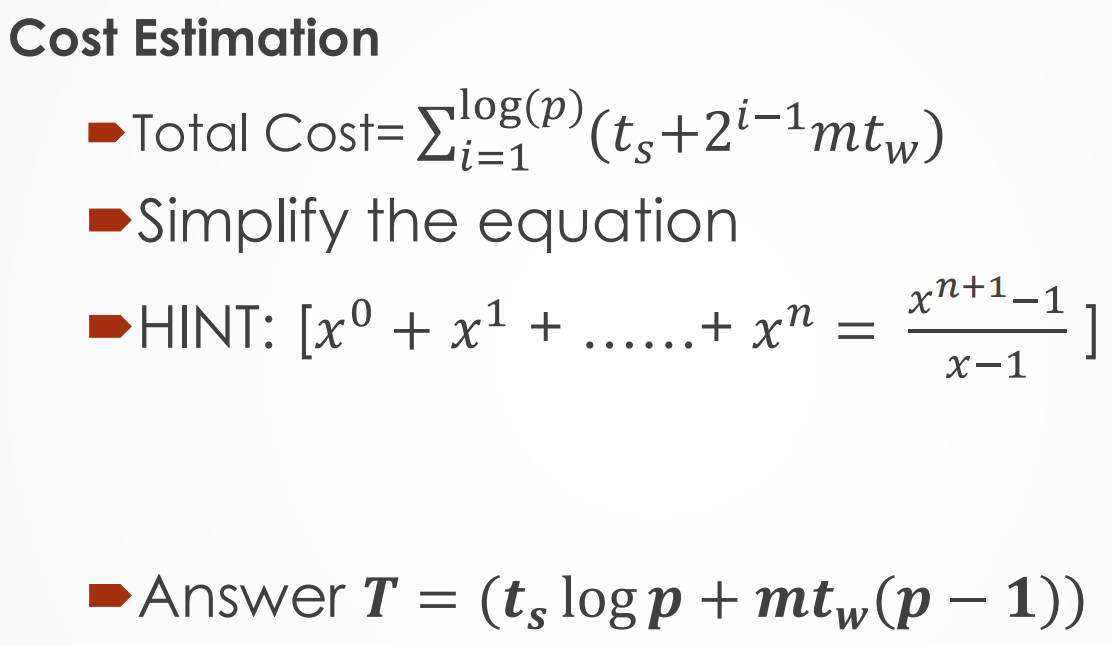
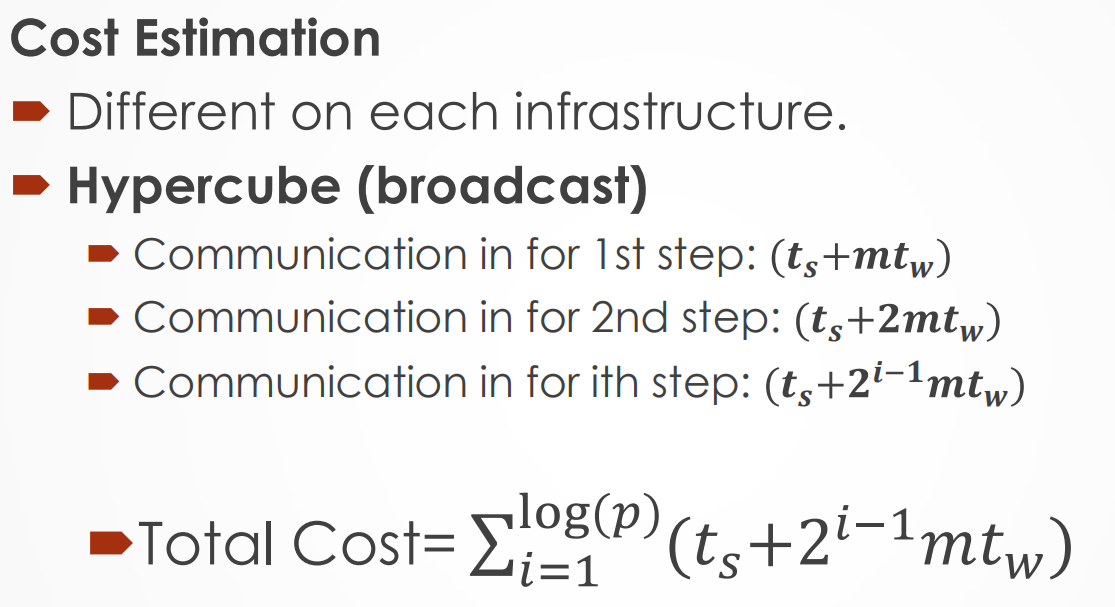


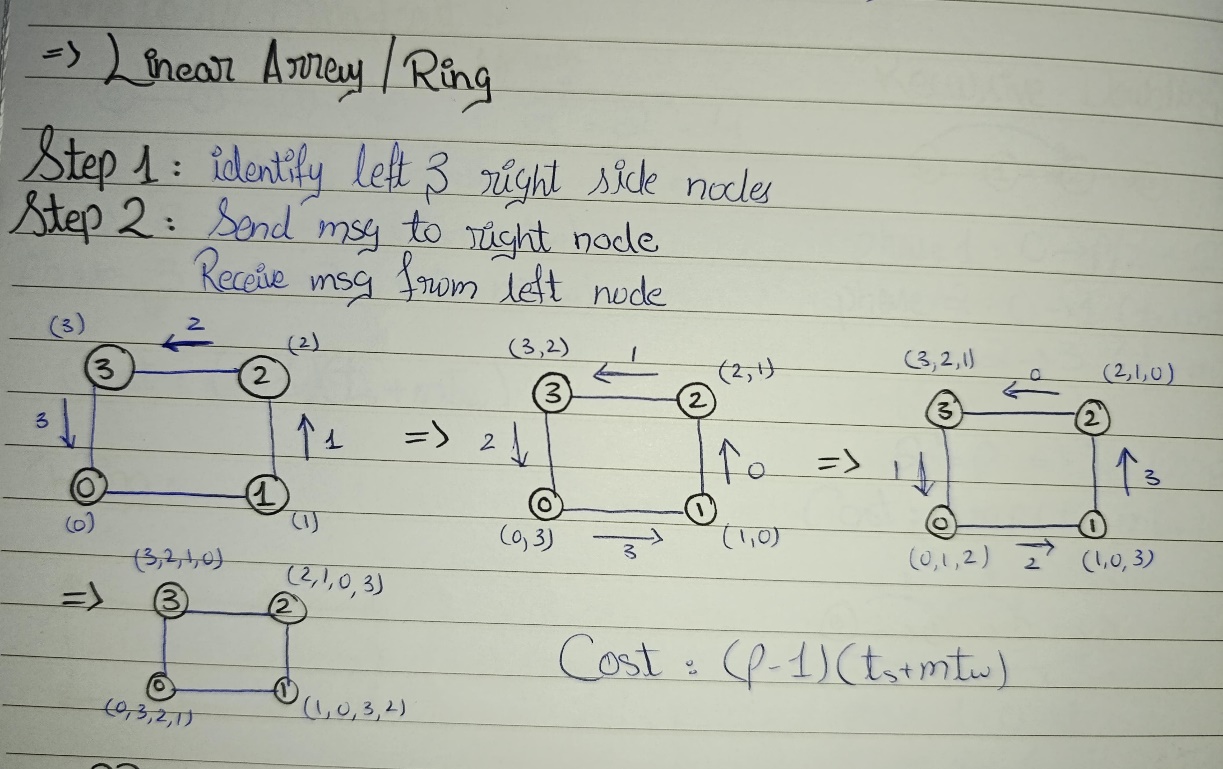


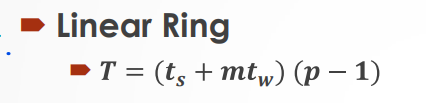


Note: m=underroot(p)m cuz now the message length has changed and the msg len is equal to the num of rows.









Prefix Sums:

