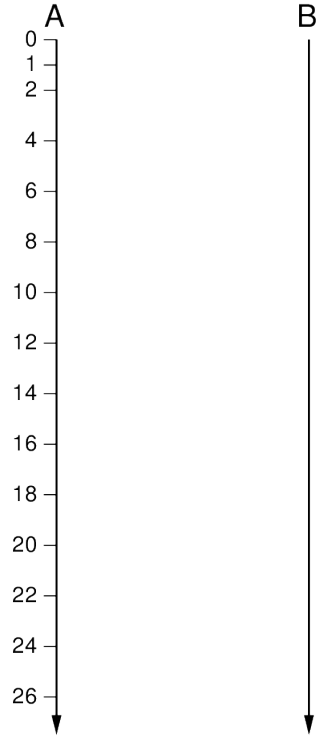
A has 5 bits to transmit to B
4.5km link
500kb/s data rate

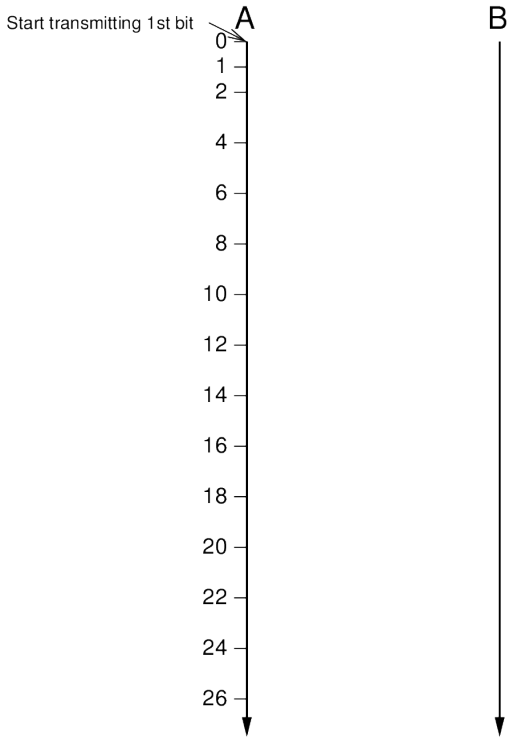
What is the total delay of delivering the information?

Two components of delay:
1. Transmission delay
2. Propagation delay

(Assume processing and queuing delays are very small, i.e. 0)

What is the transmission delay?



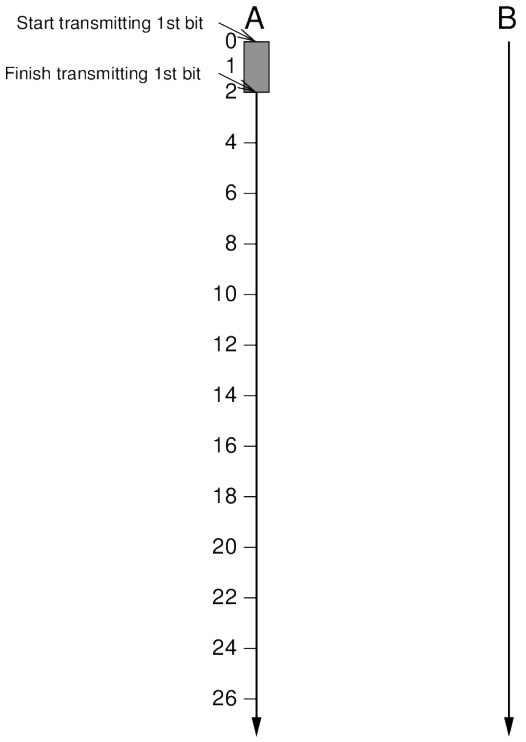


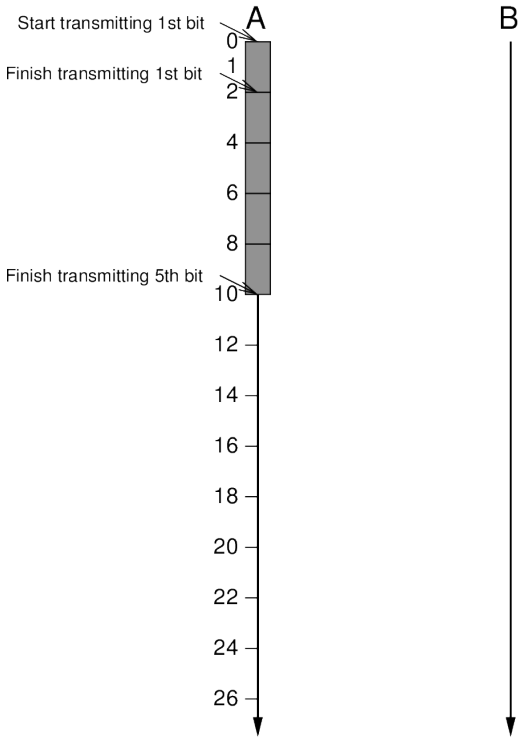
How long to transmit 1 bit?

How long to transmit 1 bit?

Data rate is 500kb/s

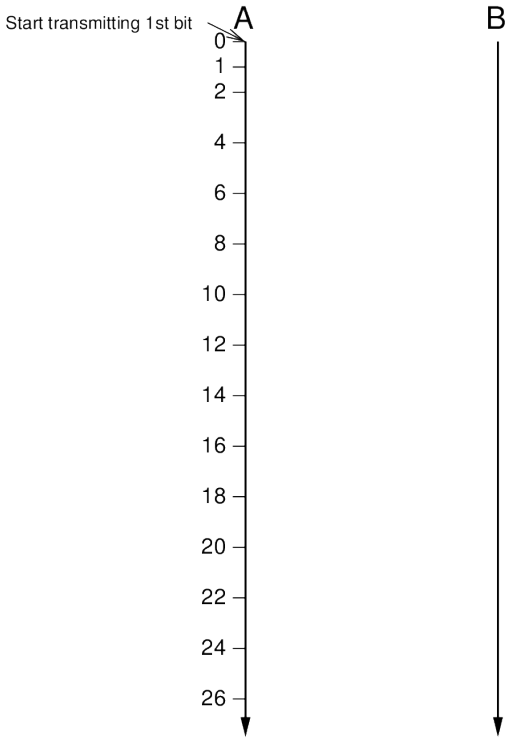
Transmission time of 1 bit is 2us



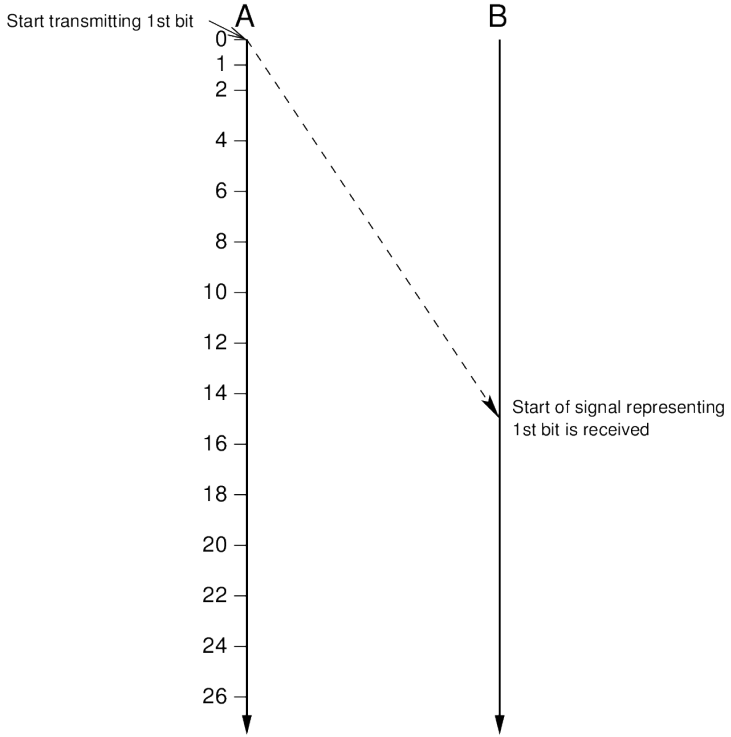


Transmission delay is 10us

What is the propagation delay?

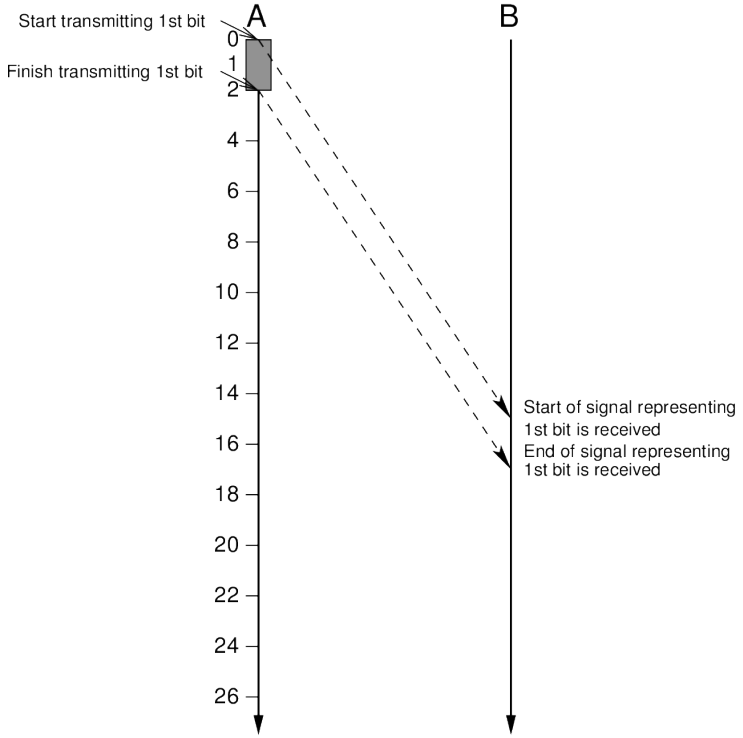


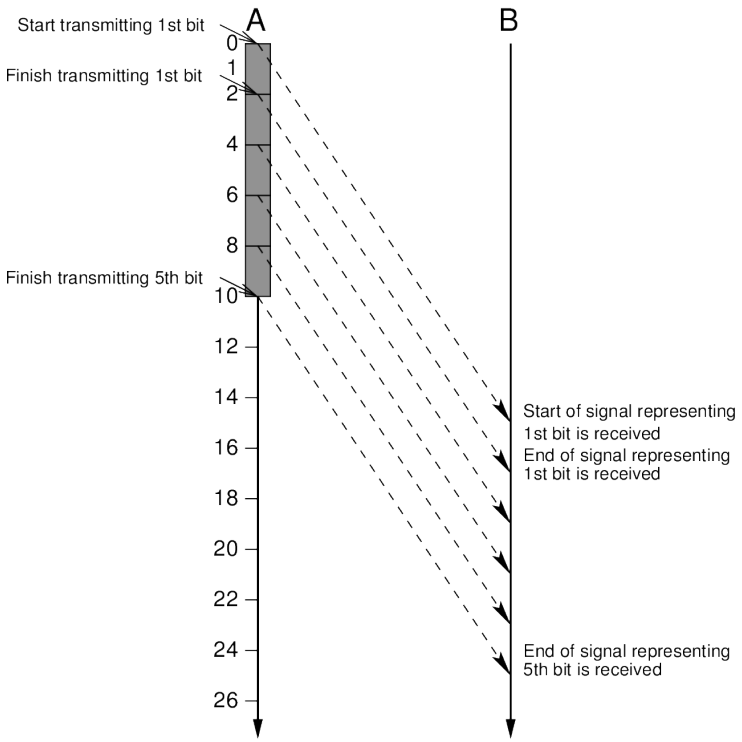
How long for signal to propagate from A to B?



How long for signal to propagate from A to B?

4.5km at $3x10^8$m/s is 15us





B receives all 5 bits at time 25us

Total delay is 25us

(10 us transmission delay +
15 us propagation delay)