C. Time to Transfer 1 bit = 1/data rate
data rate = 10^9
Time to Transfer 1 bit = 1 / 10^9 = 10^{-9}
1ns

Propagation velocity = Distance/Speed of Medium
Distance = X
Propagation velocity = 2.3 * 10^8 mps
Speed of Medium = 1ns
X / 1ns = 2.3 * 10^8

X = 1ns(2.3*10^8)

X = .000000001(2.3*10^8)

X = 0.23

Distance = 0.23 meters

12. Transmission Time = Message size / Data rate
Transmission Time = x-KB / y-Mbs = x*10^3/ y*10^6 = **x/y*10^3**

13(a). Propagation velocity = distance / speed
Propagation velocity = 385,000,000 meters / 3 * 10^8 meters per second
Propagation velocity = 1.28 seconds * 2
RTT = 2.56 seconds

13(b). RTT = 2.56
Bandwith = 1Gbps
Product = 2.56 * 10^9

13(c). **It represents the amount of buffer space that is required.**

13(d). 25MB = 25*8Mb = 200Mb
time = data size / bandwith
data size = 200,000,000 bits
bandwith = 1Gbs = 1,000,000,000
time = 0.2
Data transfer time = time + RTT = **2.76 seconds**