

CSE 160 : HW 1 - 9

2.20:- c) This can happen due to the calculation in propagation delay does not take into consideration the processing delays, which might be added due to the remote node. Thus, an immediate answer from the node might not be possible and the timeout might still occur on leading to the retransmission of the packets from the Server side.

2.21:- bandwidth = 1 Mbps

$$= 10^3 \text{ Kbps}$$

$$= 125 \text{ KB/s}$$

* the latency is 1.25 s for one way
roundtrip delay is $1.25 \times 2 = 2.5$ seconds

$$\text{packet numbers} = \frac{\text{Bandwidth} \cdot \text{roundtrip delay}}{125 \text{ KB/s}}$$

$$= 125 \text{ KB/s} \cdot 2.5 \text{ s} \\ = 312 \text{ packets}$$

$$312 \cdot 2 = 624 ; \text{ since } 2^{10} = 1024 ; 2^9 < 624 \leq 2^{10}$$

* the sequence number space should be twice of this range.

10 bits