# EE3009 Tutorial 2 (Solution)

## Question 1

a) $d_{prop} = m / s$ seconds.

b) $d_{trans} = L / R$ seconds.

c) $d_{end-to-end} = (m / s + L / R)$ seconds.

d) The bit is just leaving Host A.

e) The first bit is in the link and has not reached Host B.

f) The first bit has reached Host B.

g) $m = \frac{L}{R} S = \frac{100}{28 \times 10^3} \left(2.5 \times 10^8\right) = 893$ km.

## Question 2

a) Time = 3 × (10000 bit / 10Mbps) = 3 msec.

b) Time = 10000 bit / 10 Mbps + 2 × (5000 bit / 10 Mbps) = 2 msec.

## Question 3

The distance between Hong Kong and Taipei is much shorter than that between Hong Kong and New York City. Therefore, the former case has a much smaller propagation delay.