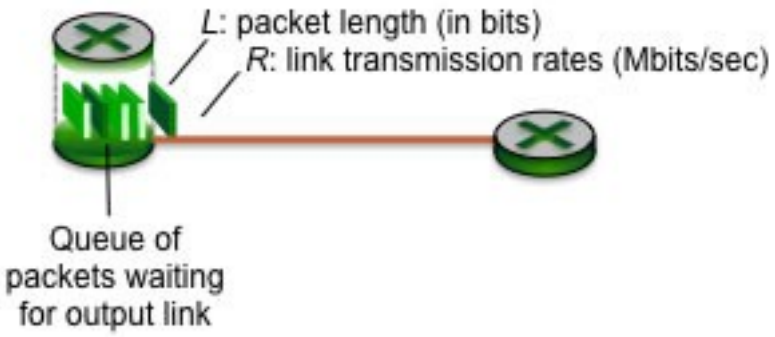
Computing the one-hop transmission delay

Consider the figure below, in which a single router is transmitting packets, each of length *L* bits, over a single link with transmission rate *R* Mbps to another router at the other end of the link.



Suppose that the packet length is *L*= 12000 bits, and that the link transmission rate along the link to router on the right is *R* = 1 Mbps.

(a) What is the transmission delay (the time needed to transmit all of a packet's bits into the link)?
(b) what is the maximum number of packets per second that can be transmitted by the link?

Solution:

(a)The link transmission delay = L/R = 12000 bits / 1 Mbps = 12.000000 msec.
(b) The link can transmit 83.333333 packets per second