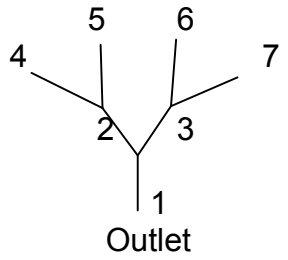
HW # 8 (Lectures 18 and 19), Due Nov. 18

1. Here, you will investigate water balance and discharge from the binary network given below. Each link, e, is given a number.



1a. Write out eq. (19.3) for the outlet link, e=1, and diagram where the flux, given by each right-hand term, appears on the network. (2 point)

b. What terms get cancelled out and what remain if Eq. (19.3) is applied to link e=4? (2 point)

2. Assume that discharge q(e,t) from link e at time t above follows the Width Function GIUH, such that time is discretized into Δt segments denoted t=1,2,3,…, discharge q(1,1)=204 m^3/s, a=20x10^3 m^2, v=1.2 m/s, and all link lengths are l=180 m.

a. What is the value of R? (2 point)

b. What is the value of q(1,3)? (3 point)

c. How much time does Δt segment represent? (1 point)