

## Open-Channel Hydraulics

### H.W.#9. Numerical Methods for Unsteady Flows

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For the boundary and initial conditions for the example described in the 1981 paper, "Diffusive Wave Flood Routing in Channel Networks" by Akan and Yen, solve for the outflow hydrograph of channel 1 by using

- (a) an explicit method
- (b) a characteristic method
- (c) an implicit method

The channel 1 is 600 m long and 5 m wide. The slope is 0.0005 and Manning's roughness coefficient is 0.0138. Use the critical flow condition at the downstream boundary and initial condition given in the figure below:

