Self-check on Notes set #4

What is the water balance equation for the root zone?

Consider a soil that is initially dry. At the surface, water is added at a high rate. Over time, the rate at which water enters the soil reduces, why?

Continuation 1: What is the final infiltration rate?

Continuation 2: What is the relationship between the infiltration rate at the soil surface, i, and the cumulative infiltration, I?

Continuation 3: If the rate of water supply to the soil surface is greater than the saturated hydraulic conductivity, surface ponding occurs, why?

What is the sorptivity, S?

What are the assumptions used to derive the Green and Ampt infiltration equation?

If there is no vertical drainage, how does the water pressure head, h, vary with height above the watertable?

If the moisture content, θ, is uniform with depth, z, what force is responsible for moving water vertically downward?

What factors control evaporation from a bare soil?

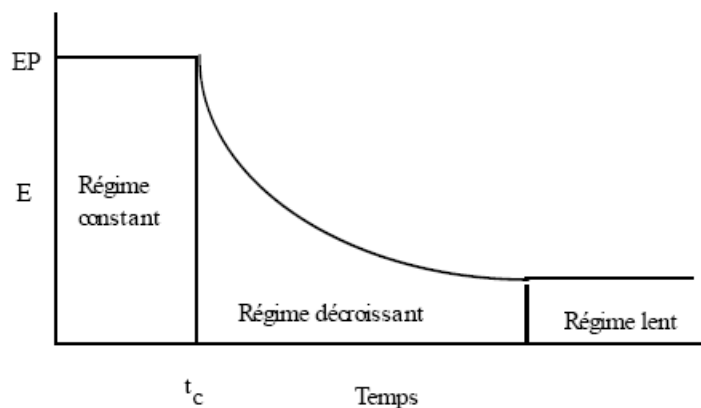Explain the three different regimes in the following figure:

Fig. 4.9 : *Evolution temporelle de l'évaporation d'un sol initialement très humide*

What are the three factors that influence evapotranspiration?

What is the principle underlying the Penman equation?

The rate of evaporation depends on (i) the evaporative demand of the atmosphere and (ii) the capacity of the soil to transmit water. Cross out the incorrect word in {} in the following sentence:

The evaporation rate is controlled by the {largest, smallest} of the two factors, (i) and (ii).