Prob. 4.1.1. A confined aquifer is 18.5 m thick. The potentiometric surface elevations at two observation wells 822 m apart are 25.96 and 24.62 m. If the horizontal hydraulic conductivity of the aquifer is 25 m/day, determine the flow rate per unit width of the aquifer, the specific discharge, and the average linear velocity do the flow assuming steady unidirectional flow. The porosity is 0.25.

Prob. 4.1.7. An unconfined aquifer in a stratum of clean sand and gravel has a conductivity of $10^2$ cm/sec (8.64 m/day). From two observation wells 200 m apart, the observed water table elevations are 11 and 7 m measured form the bottom of the stratum. Determine the discharge per unit width of the aquifer.

Prob. 4.1.10. A canal is constructed parallel to a river 460 m away both fully penetrating an unconfined aquifer of clean sand and gravel as shown in the figure. The aquifer has a conductivity of 18.5 m/day and is subject to an average infiltration of 1.6 m/year. The water surface elevation in the canal is 8.5 m and in the river it is 10 m. Determine the daily discharge of groundwater into the canal and into the river per km of both.