A watershed has channel with a width of 10 feet and a depth of 2 feet at bankfull discharge. Over time, land development upstream of the site increases the index discharge by 3 times, and the sediment transport is increased by 5 times. Predict the number equilibrium conditions for the channel for the following scenarios (assuming $\beta$=5):

a) Assume that the channel width remains the same, and find the new equilibrium depth and slope.
b) Assume that the channel depth remains the same, and find the new equilibrium width and slope.