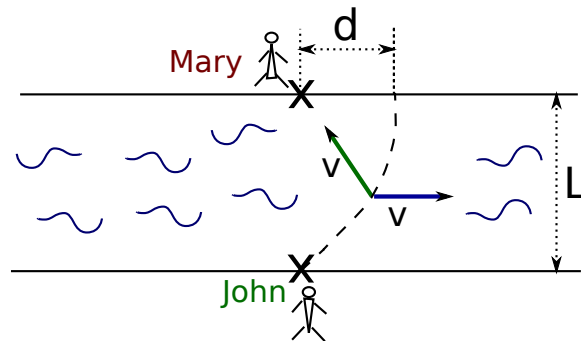# John & Mary problem

To reach Mary, John has to cross a river. He is swimming with velocity v and **at each moment** of time he is heading **towards Mary**. However, the river's current has also velocity v so John's displacement is determined by a sum of two velocities that are shown on the Figure. John starts to swim right below the Mary's position, width of the river is L. Find at which distance d will be John from Mary when he reaches the Mary's side of the river.