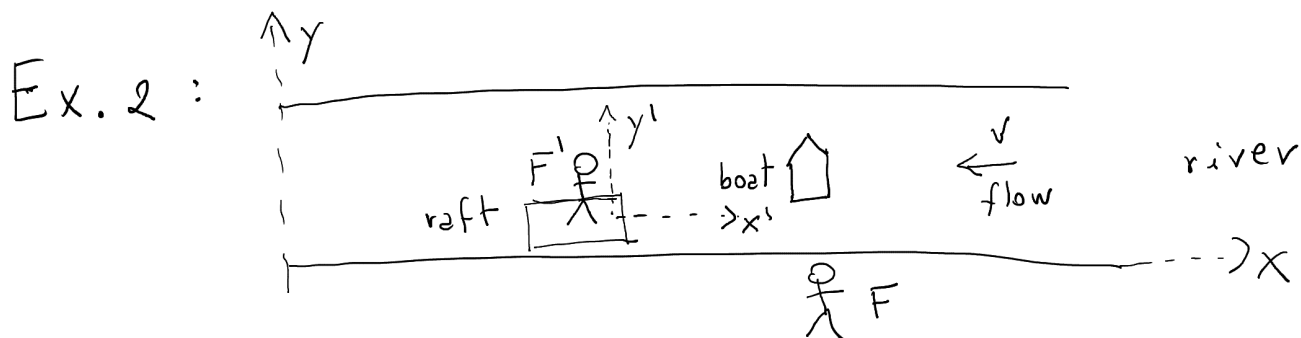


COURSEWORK 1

Ex. 1: see TUTORIAL 1



From Galilean relativity we have

$$t' = t, \quad x' = x + vt, \quad y' = y \Rightarrow$$

$$u'_x = u_x + v, \quad u'_y = u_y$$

In the frame F' $u'_x = 0$ (the boat crosses the river at right angles). Then in the frame F $u_x \neq 0$

and $\tan \theta = \frac{u_y}{u_x} = \frac{u'_y}{v}$. If $v \neq 0$ then $\theta \neq \frac{\pi}{2}$