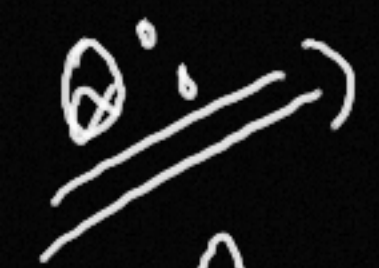


First Question from the book

"Problems in General Physics"

By I. E. Irodov

P.S. This book has always been highly relevant as far as IIT Advanced Paper is concerned.



A motorboat going downstream overcame a raft at a point A, at  $T = 60$  min later it turned back and after some time passed the raft at a distance  $l = 6.0$  km from the point A. find the flow velocity assuming the duty of the Engine to be constant.

Ams: mathematical solution involving equations  
is given everywhere.

Now use your PFC (Pre-frontal cortex)  
i.e. that part of brain where logical  
thinking is processed)

Use "Relative motion"

Take river to be at rest, Then

craft is also at rest.

So if motor boat moved for 60 min.

& then turned, it will again take 60 min

to reach craft. So total time taken

is 120 min - i.e. 2 hours.

Now focus on "Raft" in Real motion.

In this 2 hrs, Raft has moved 6 km  
with flow velocity.  $\Rightarrow$  obviously flow velocity =  $\frac{6}{2}$

$$\Rightarrow \underline{3 \text{ km/hr}}$$