Answer on Question #48714, Physics, Other

Task:

To cross the river in shortest distance, a swimmer should swim making an angle '0' with the upstream. What is the ratio of time taken to swim across in the shortest time to that in swimming across over shortest distance. { Assume speed of swimmer in still water is greater than speed of river.}

(1) cos '0'

(2)sin'0'

(3)tan'0'

(4)cot'0'

Solution:

So if speed of swimmer in still water is greater than speed of river, we neglect speed of the river.

the ratio of time taken to swim across in the shortest time to that in swimming across over shortest distance t=Vcos'0'/Vsin'0'=cot'0'.

Answer: (4)cot'0' .