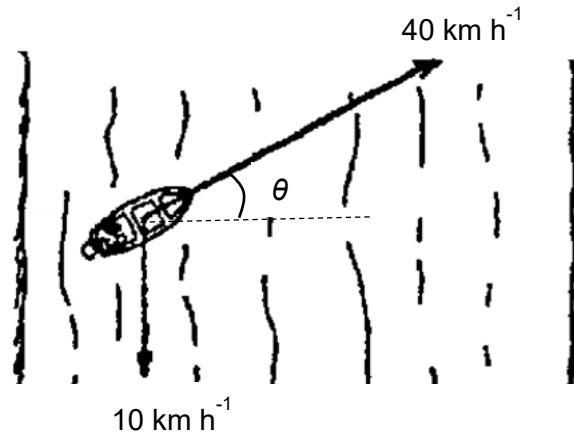


- 2 The diagram shows the top view of a motorboat crossing a river. The water current causes the motorboat to drift at a speed of  $10 \text{ km h}^{-1}$  downstream, along the length of the river.



If the engine drives the motorboat at a speed of  $40 \text{ km h}^{-1}$  relative to the water, what should the angle  $\theta$  be in order for the motorboat to (a) take the shortest path to the opposite shore and (b) take the shortest time to reach the opposite shore?

	(a)	(b)
<b>A</b>	$14^\circ$	$14^\circ$
<b>B</b>	$14^\circ$	$0^\circ$
<b>C</b>	$0^\circ$	$14^\circ$
<b>D</b>	$0^\circ$	$0^\circ$

