SPEED DISTANCE TIME

(1) $$SPEED = \frac{DISTANCE}{TIME}$$
(2) $$TIME = \frac{DISTANCE}{SPEED}$$

(3) $DISTANCE = SPEED \times TIME$

(4) If the speed of a body is changed in the ratio a:b then the ratio of the time taken changes in the ratio b:a.

(5) $x\,km/hr = (\frac{x \times 5}{18})m/sec$
(6) $x\,m/sec = (\frac{x \times 18}{5})km/hr$

## BOAT & STREAMS

(1) Speed of Boat ( swimmer) = Speed of boat in still water

Upstream : Boat moves against the stream

Downstream : Boat moves with the stream

(2) If speed of boat is 'x' and speed of stream is 'y' , then the

effective speed DOWNSTREAM    a = x + y

effective speed UPSTREAM        b = x – y

(3) A boat's speed in still water is half the sum of its speed with and against the current

Let speed of boat downstream is 'a' km/hr and upstream is 'b' km/hr

then **speed in still water** is $\frac{(a+b)}{2}km/hr$

(4) The speed of current is half the difference between the speed of boat with and against current.

Let speed of boat downstream is 'a' km/hr and upstream is 'b' km/hr

then **speed of current** is $\frac{(a-b)}{2}km/hr$