

Speed of boat = 24 km/hr.

Let speed of current = x km/hr.

Downstream speed = $(24+x)$ km/hr

Upstream speed = $(24-x)$ km/hr.

$$t = \frac{D}{S}$$

$$\frac{40}{24+x} + \frac{40}{24-x} = 7$$

$$(24-x)40 + (24+x)40 = 7(576 - x^2)$$

$$960 - 40x + 960 + 40x = 4032 - 7x^2$$

$$4032 - 7x^2 = 1920$$

$$7x^2 = 4032 - 1920$$

$$7x^2 = 2112$$

$$x^2 = \frac{2112}{7}$$

$$x = \pm 17.3699$$

$$x = -17.37 \text{ or } 17.37$$

$\therefore$ Speed of current ≈ 17.36

17.36 km/hr.