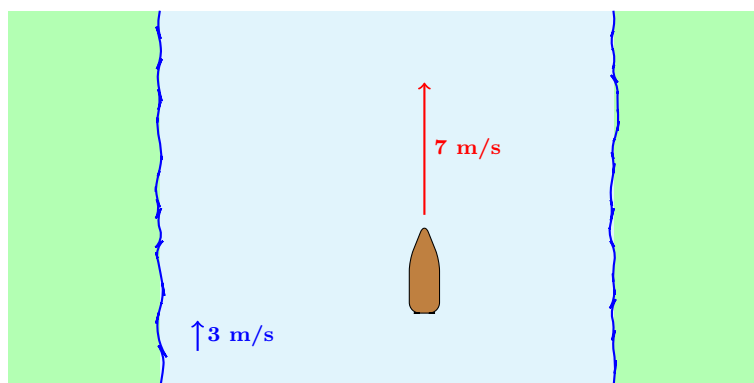


Relative Velocity

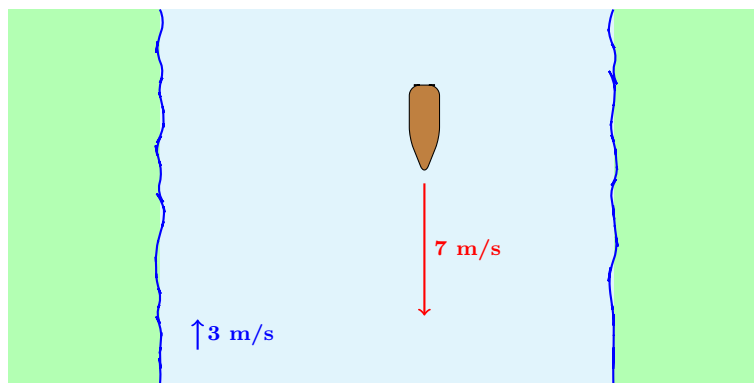
$$\vec{v}_{AC} = \vec{v}_{AB} + \vec{v}_{BC}$$

$$\vec{v}_{AB} = -\vec{v}_{BA}$$

1. A motor boat travels at a velocity 7 m/s north (with respect to the water). The river flows north at a speed of 3 m/s (with respect to the shore). From the perspective of someone standing on the shore, what is the boat's velocity?



2. A motor boat travels at a velocity 7 m/s **south** (with respect to the water). The river flows north at a speed of 3 m/s (with respect to the shore). From the perspective of someone standing on the shore, what is the boat's velocity?

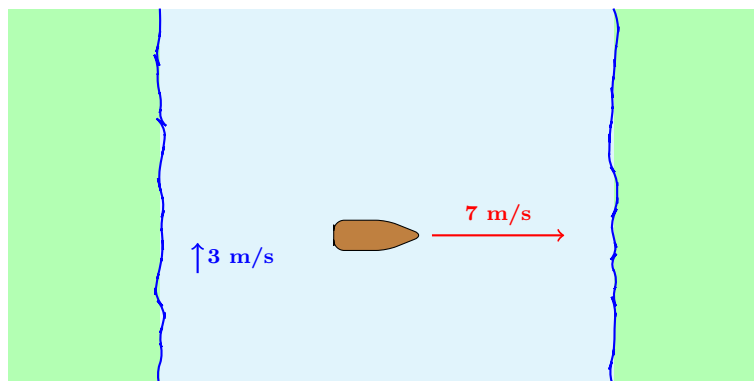


Name: _____

Date: _____

Period: _____

3. A motor boat travels at a velocity 7 m/s **east** (with respect to the water). The river flows north at a speed of 3 m/s (with respect to the shore). From the perspective of someone standing on the shore, what is the boat's velocity (magnitude and direction)?



4. Car #1 is going 80 MPH east. Car #2 is going 56 MPH east. From the perspective of Car #1, what velocity does Car #2 have?