

Cycle 17 - 2D Motion

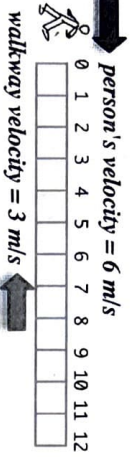
Review

Name: Anne S11's



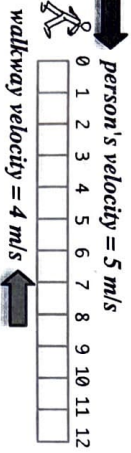
Resultant Velocity $V_x = 4 \text{ m/s}$

Time to cross walkway = $\frac{(D_x)}{(V_x)} = \frac{12 \text{ m}}{4 \text{ m/s}} = 3 \text{ s}$



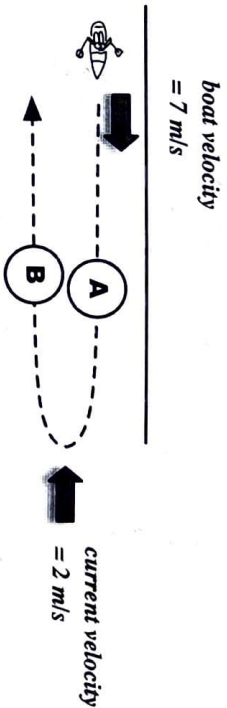
Resultant Velocity $V_x = 9 \text{ m/s}$

Time to cross walkway = $\frac{(D_x)}{(V_x)} = \frac{12 \text{ m}}{9 \text{ m/s}} = 4 \text{ s}$



Resultant Velocity $V_x = 9 \text{ m/s}$

Time to cross walkway = $\frac{(D_x)}{(V_x)} = \frac{12 \text{ m}}{9 \text{ m/s}} = 4 \text{ s}$



A The boat travels 90 m up the river against the current.

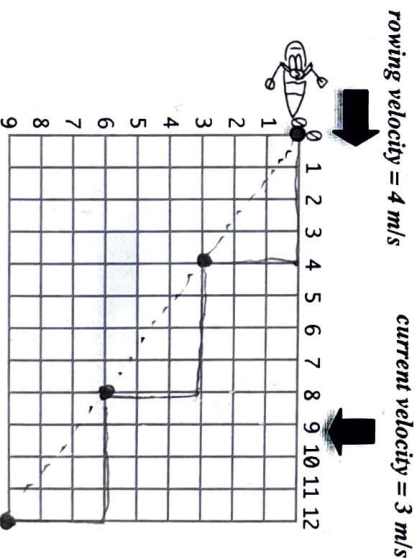
Resultant Velocity $V_x = 5 \text{ m/s}$

B The boat travels 90 m down the river with the current.

Resultant Velocity $V_x = 9 \text{ m/s}$

Time to travel up river = $\frac{(D_x)}{(V_x)} = \frac{90 \text{ m}}{5 \text{ m/s}} = 18 \text{ s}$

Time to travel down river = $\frac{(D_x)}{(V_x)} = \frac{90 \text{ m}}{9 \text{ m/s}} = 10 \text{ s}$



First solve for the time it takes the boat to cross 12 m to the right.

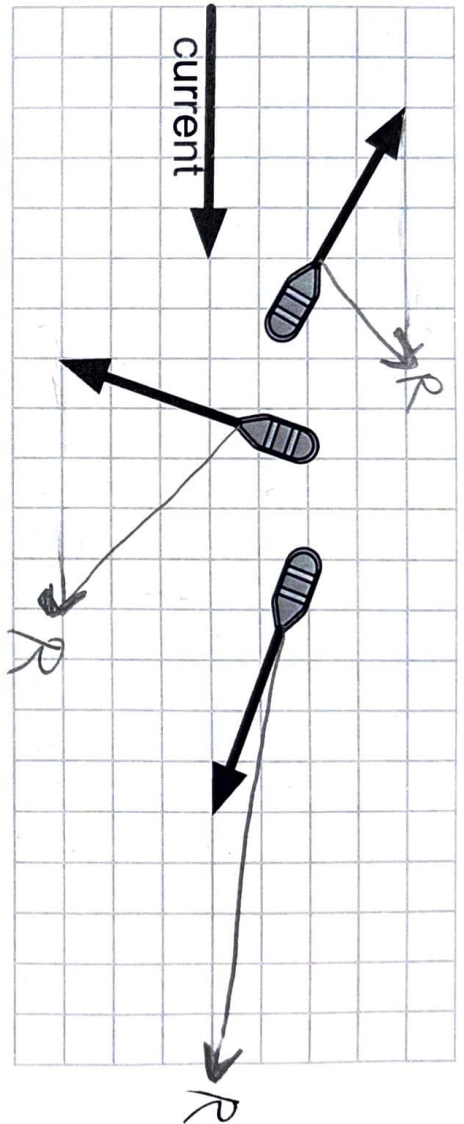
3 seconds

Then solve for how far down the current carries the boat downward.

9 meters

The current is 5 m/s towards the right of the paper (the scale is 1 box = 1 m/s)

Draw the resultant current for each of the boats.



In situation A, the swimmer can swim 100 yds in 35 s in calm water. What will happen to the same swimmer trying to swim 100 yds in situations B, C and D as shown to the right?



A

----->

(no current)

35 seconds



B

----->

current

----->

☐ more than 35 s
☒ 35 s
☐ less than 35 s

☐ on course
☒ off course



C

----->

current

----->

☒ more than 35 s
☐ 35 s
☐ less than 35 s

☒ on course
☐ off course



D

----->

current

----->

☐ more than 35 s
☐ 35 s
☒ less than 35 s

☒ on course
☐ off course