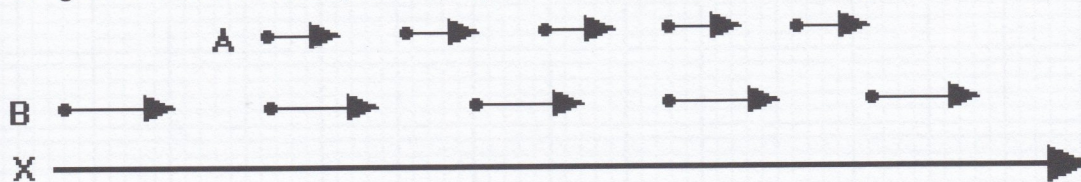


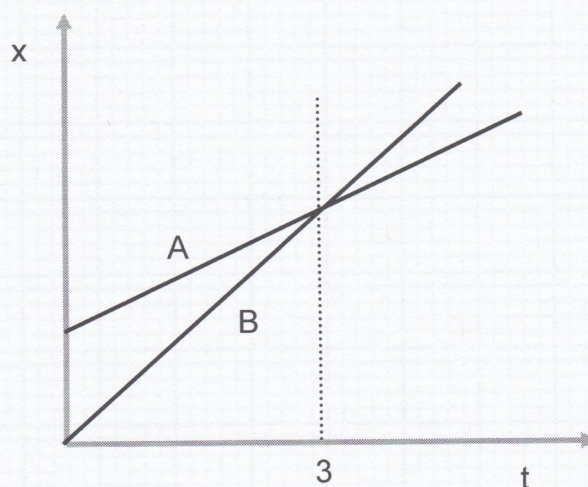
Model Reading: Motion Maps

Consider the interpretation of the motion map below. At time $t = 0$, cyclist A starts moving to the right at constant velocity, at some position to the right of the origin.



Cyclist B starts at the origin and travels to the right at a constant, though greater velocity. At $t = 3$ s, B overtakes A (i.e., both have the same position, but B is moving faster).

A graphical representation of the behavior of cyclists A and B would look like this:



You could also represent the behavior algebraically as follows:

$$\begin{aligned} x &= v_A t + x_0, & \text{for A} \\ x &= v_B t, & \text{for B} \end{aligned} \quad \text{where } v_B > v_A$$

Throughout this semester, you will be representing the behavior of objects in motion in multiple ways: diagrammatically (motion maps), graphically and algebraically.

Hints on drawing your own motion maps:

1. Draw dots indicating the position of the object at equal time intervals, i.e. each second.
2. Attach arrows to the dots indicating the direction of motion. Make the arrow length half of the space between the dots to make your motion map easy to read.
3. When an object is stopped for several time intervals, draw multiple dots at the same position.
4. Make sure your sequence of arrows has a logical flow so that the motion is clearly communicated.