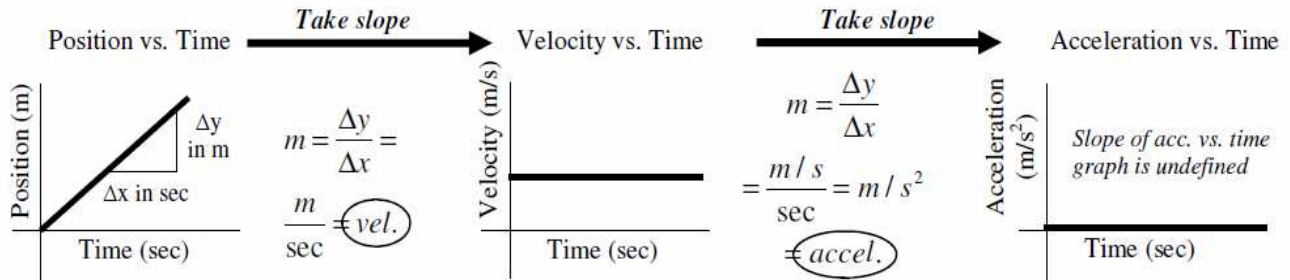


Translating Graphs

Translating graphs is the process of changing one motion graph to another: from position to velocity or acceleration.

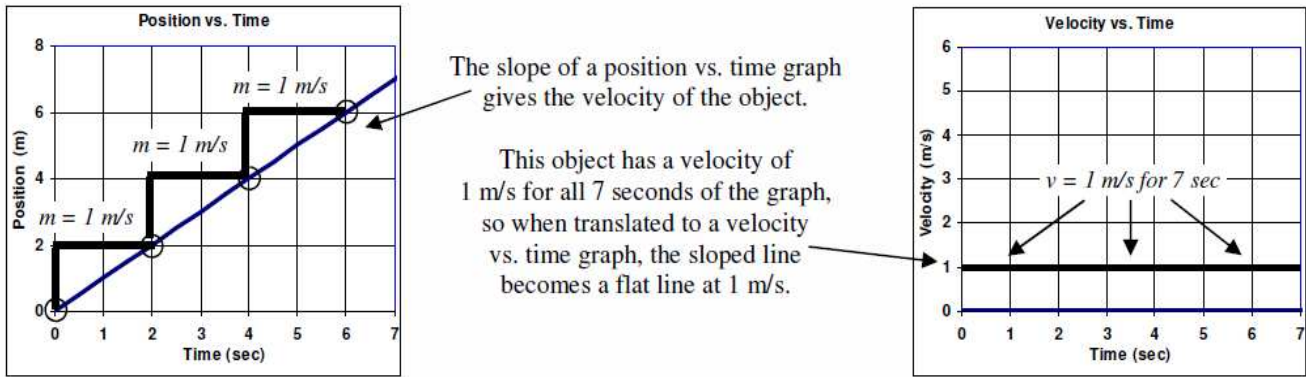
Taking Slope

When translating graphs, simply take the slope. The slope of a position vs time graphs is the velocity of the object. The slope of a velocity vs. time graph is acceleration.



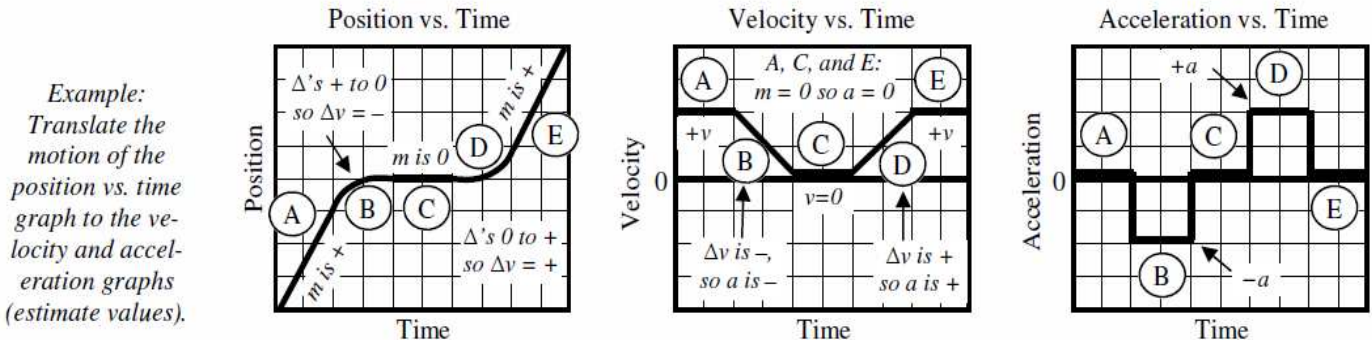
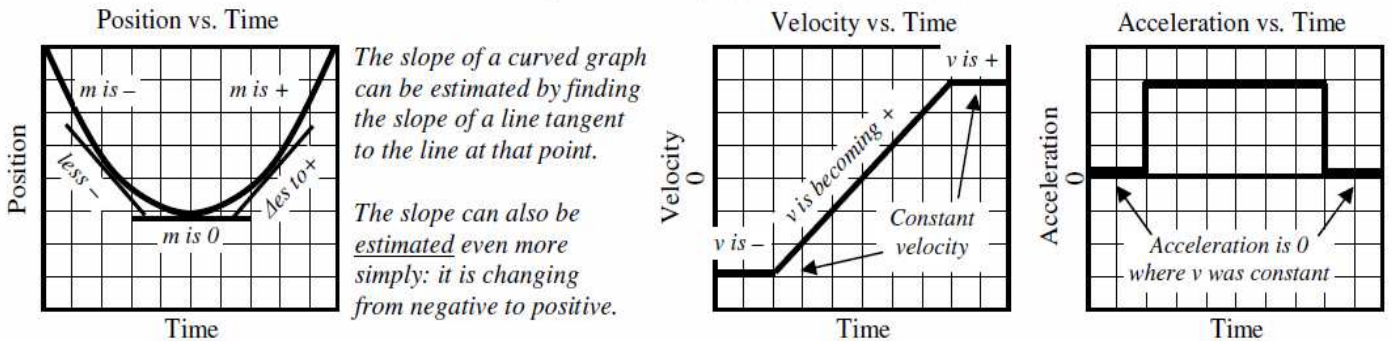
Constant Slope

If the slope of a position vs. time graph doesn't change: the velocity doesn't change. Therefore, the graph is a flat line on a velocity vs. time graph.



Changing Slope

A curved position vs. time graphs show acceleration, since the slope changes. It is not very easy to find the exact slope of a curved graph, so the velocity graph will be an estimate.



Which segment/s shows the following:

Constant velocity

$\Delta x = +$

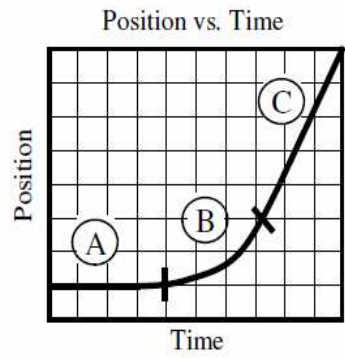
Velocity = 0

$\Delta x = -$

Acceleration

Acceleration = 0

$v = +$



Which segment/s shows the following:

Constant velocity

$v = +$

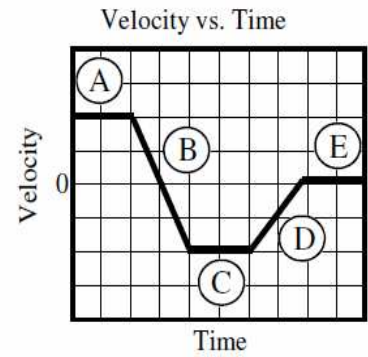
Velocity = 0

$a = -$

$\Delta v = -$

$a = +$

Acceleration = 0



For each of the following three examples, translate the given graph to the other two. For these graphs assume that each vertical square equals 1 meter and each horizontal square equals 1 second.

<p>Position vs. Time</p>	<p>Velocity vs. Time</p>	<p>Acceleration vs. Time</p>
<p>Position vs. Time</p>	<p>Velocity vs. Time</p>	<p>Acceleration vs. Time</p>
<p>Position vs. Time</p>	<p>Velocity vs. Time</p>	<p>Acceleration vs. Time</p>