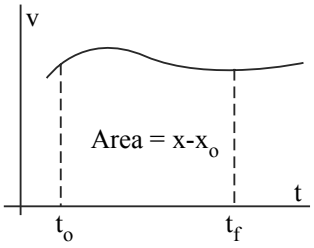
Comparing Velocity and Acceleration

VELOCITY	ACCELERATION
$v_{ave} = \frac{\text{displacement}}{\text{elapsed time}} = \frac{\Delta x}{\Delta t}$	$a_{ave} = \frac{\text{change in velocity}}{\text{elapsed time}} = \frac{\Delta v}{\Delta t}$
$v = \frac{dx(t)}{dt}$	$a = \frac{dv(t)}{dt}$
Rate of change of position with respect to time.	Rate of change of velocity with respect to time.
Slope of tangent line to a **x vs.t** curve.	Slope of tangent line to a **v vs.t** curve.
When v = constant, **x vs. t** curve is a straight line.	When a = constant, **v vs. t** curve is a straight line.
In a **v vs. t** graph, the area between the curve and the time axis equals the **displacement** of a particle between the corresponding time interval. $\boxed{x - x_o = \int_{t_o}^{t_f} v dt}$ Displacement 	In a **a vs. t** graph, the area between the curve and the time axis equals the **change in velocity** of a particle between the corresponding time interval. $\boxed{v - v_o = \int_{t_o}^{t_f} a dt}$ Change in Velocity