Week 10 Graph Sketching & Kinematics Lecture Note

Notebook:	Computational Mathematics		
Created:	2020-04-21 2:48 PM	**Updated:**	2020-05-22 5:57 PM
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Cornell Notes	**Topic:** Graph Sketching & Kinematics Continued	Course: BSc Computer Science Class: Computational Mathematics[Lecture] Date: May 22, 2020

Essential Question:

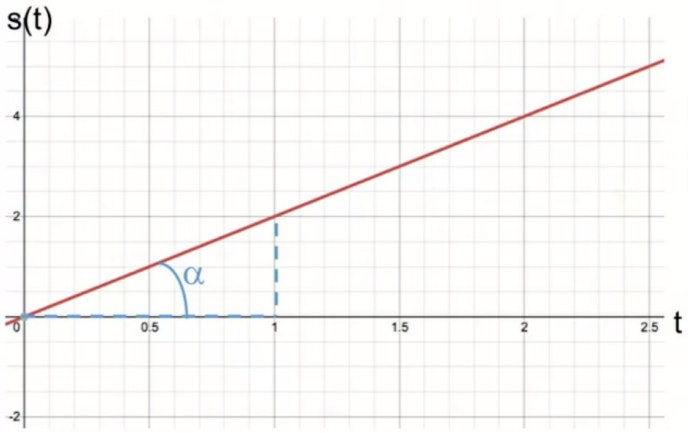
What is a function and what are its applications to kinematics (simple motion)?

Questions/Cues:

- What is the uniform motion on a straight line in the case of constant velocity?
- What is uniformly accelerated motion in the case of a projectile?

Notes

Uniform motion on a straight line: constant velocity

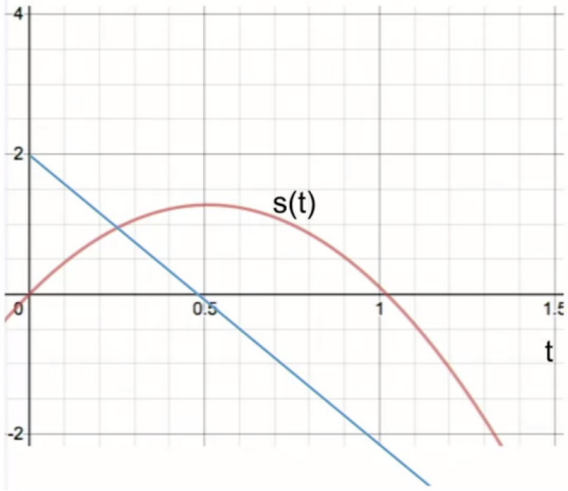


$v(t)=v_0=\text{const}$
$s(t)=s_0+v_0t$

$s_0=0$
$v_0=2\text{m/s}$

$\tan(\alpha)=2/1=v_0$

Uniformly accelerated motion: projectile



$v(t)=v_0+a\,t$
$s(t)=s_0+v_0t+at^2/2$

$s_0=0$
$v_0=2m/s$
$a=g=-9.8m/s^2$

Uniform motion → $v(t)=v_0=const$, $s(t)=s_0+v_0t$

Uniformly accelerated motion → $v(t)=v_0+a\,t$, $s(t)=s_0+v_0t+a\,t^2/2$

Summary

In this week, we learned about uniform motion and uniformly accelerated motion.