

October 7, 2019

Open Seating, Sit anywhere at a table

Measuring your Molecular Kinetic Energy

- How are you doing today?
- How was your weekend?
- What are you looking forward to this week?

Entry: Answer the following in your notebook

Fill in the table by writing the name and units of the listed kinematic variables

Variable	Name	Units
a		
v_0		
v_f		
s_0		
s_f		
t_0		
t_f		
m		
F		

Housekeeping

- College and Financial Aid Night, Oct 9th at 5:30 PM
- College App Office hours:
- Problem Set #6 due date change
- Next Homework Quiz Thursday/Friday Oct. 17/18
- Honors Assignment #3 Due Friday
- Progress Report Grades due tonight
- Corrections and Late work for weeks 1-5 due Oct. 11, List Available
- DP Updates
- Office Hours:
 - Monday at Lunch
 - Wednesday 9-9:30 AM
 - Friday 9-9:30 AM

Today

Falling Ball/Diver Problem Review

Homework Quiz #4 Revisit

Shopping Cart Problem Continued

This week

Monday: Kinematic Clean up

Tuesday/Wednesday: Kinematic Crime Solving & Work Clean up Time

Thursday/Friday: Energy Conversion and Gravity-Mass Driven Vehicles

Another Falling Ball Problem

A ball rolls down a ramp and off a table that is 0.71 meters high. If the ball leaves the table travelling at a velocity of 1.18 m/s in the horizontal (x) direction, where should you place a bucket to catch it?

Step 1: Draw a picture and a Free Body Diagram (make sure to set your negative and positive directions here!)

Step 2: Make tables/organize your paper so you can keep track of the variables

Step 3: Make a table to organize the information you are given and the information you are trying to find

Step 4: Identify the equations that apply and will give you the information you are trying to find

Step 5: Determine if you have all the information for those equations. If you don't identify the equations that allow you to calculate it

Step 6: Plug information in equations and calculate. Be careful about what is negative and positive here!

Step 7: Check to make sure you found the information you intended and that your answer makes sense

Revisit Homework Quiz #4

Now that we have reviewed how to tackle this type of 2D kinematic Problem, retry the problem on Homework Quiz #4.

Homework Quiz#4 Instructions

- Individual Work (not open partner)
- Problem Sets in the box or away, You can use your notes
- Phones away, Use a calculator for any calculations
- No talking please
- Raise your hand if you have a question
- Please work on the Shopping Cart Problems if you finish

What if the parking lot wasn't flat?

Imagine the parking lot is on a hill, and you let your full cart go 25 meters before your car.

- If the hill is at 30° angle, What is the velocity of the cart when it hits your car?
- Draw a position vs. time, velocity vs time, and acceleration vs. time graph for this motion for both the horizontal and vertical motion.
- Draw a Force vs. Time and a Force vs. Distance graph for both the horizontal and vertical motion.
- What are the areas under the Force vs. Time and Force vs. Distance graphs telling you?



30°

