

Physics 2A Spring 2020

Discussion 1

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Wednesday, April 1, 2020

- Introduction
- Office hour: Tuesday 3-4pm
Link: <https://ucsd.zoom.us/j/904062368> (meeting ID: 904-062-368)
- Project teams
- General questions
- Math fundamentals

1. Vectors

Two cars are initially at the same location. Car A travels 100m in the direction 30 degrees north of east, and car B travels 200m in the east direction. How far apart are the two cars now? Which direction is car B as seen from car A?

2. Physical quantities and units

Make a guess on how energy is related to mass and velocity (Hint: energy has unit $\text{kg}\cdot\text{m}^2/\text{s}^2$).

3. Kinematics

A ball is dropped from 100 m above the ground. At what height is the ball after 3 seconds? What is its velocity? (Assume the acceleration is $g = 10 \text{ m/s}^2$) Also what is the general expression of the ball's height as a function of time in terms of the quantities given?

4. Estimation

Roughly estimate how many soda cans can fit in the Geisel Library.