308 notes 4.1-4.5

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1 Energy for Linear One-Dimensional Systems

1.1 Graphs of the potential energy

The roller coaster analogy is really old school lol.

1.2 Complete solution of the motion

Equation (4.58) can be confusing to someone who hasn't study physics for a time lol. The substitution of x' reminds me of my old miserable days with real analysis.

2 Curvilinear One-Dimensional Systems

Real roller coaster involving lol.

I feel like to any non-physics students, the concept of normal force being the force of constraint is really unintuitive.

2.1 Further generalizations

I don't like pulleys...

I wonder in the future, if we will be dealing with the rotational energy and/or momentum of the pulley. That would be interesting in a way that we can no longer neglect the friction anymore?

3 Central Forces

Here comes the polar coordinates...

3.1 Spherical polar coordinates

Never know that ϕ had a name...azimuth.

3.2 Conservative and spherically symmetric, central force

Taylor's proof was indeed, not insightful...

4 Energy of Interaction of Two Particles

5 The Energy of Multiparticle system

How is this different from previous sections except this time is potential energy instead of force...