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Analysis of experiment # 5. Updated Timeline.

- $\sqrt{11/14}$: collisions in the May room
- ✓ 11/18: analysis files available.
- nhv14<u>1/lab05/</u> edu/~tdin chester • √ 11/25: each student has determined his/her best estimate of the velocities before and after
- the collisions. • ? 11/25: complete discussion and comparison of results with colliding partners and submit final
- results (velocities and errors). • 11/27: results will be compiled, linear momenta and kinetic energies will be determined, and
- results will be distributed. • 12/2: office hours by lab TA/TIs to help with
- analysis and conclusions.
- 12/6: students submit lab report # 5. Frank L. H. Wolfs Department of Physics and Astronomy, University of Rochester, Lecture 23, Page 3

















- At this time of the year, the University asks each student to complete an on-line survey about the courses he/she is enrolled in. • This survey is used both at the College level and at the
- Departmental level to monitor the teaching effectiveness of our faculty.
- · You will receive an email from the Dean's office with the
- You will receive an email from the Dean's office with the proper URL to access the on-line survey.
 I will not see the responses until after the grades have been handed in, so your response may not benefit you directly, but the responses of previous students have shaped your experience in Physics 141.
 If 90% of the Physics 141 students participate in the survey by Tweedex 12/10, experience will receive 5% house points.
- by Tuesday 12/10, everyone will receive 5% bonus points
- on the final exam. H. Wolls Department of Physics and Astronomy, University of Rochester, Lecture 23, Page









The kinetic theory of gases. Thermodynamic variables.

- The kinetic theory of gases provides a framework to connect the microscopic properties of the molecules in a gas (such as their rms velocity) to the macroscopic properties of the gas (such as volume, temperature, and pressure).
- The volume of a gas is defined by the size of the enclosure of the gas. During a change in the state of a gas, the volume may or may not remain constant (this depends on the procedure followed).
- The temperature of a gas has been defined in terms of the entropy of the system (see discussion in Chapter 12).

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- · We will now briefly discuss pressure.

Frank L. H. Wolfs





































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- Consider a gas contained in a container.The molecules in the gas will
- ontinuously collide with the walls of the vessel.Each time a molecule collides with the
- wall, it will carry out an elastic collision.
- Since the linear momentum of the molecule is changed, the linear momentum of the wall will change too.
- Since force is equal to the change in linear momentum per unit time, the gas will exert a force on the walls.

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