

HW#7: Appl. of Newton's Laws (Due 11 pm **central time**, 10/28, Tuesday).

HW hint posted on course web (<http://web.njit.edu/~kenahn>)

Common exam 2 on Oct 31<sup>st</sup>, Friday

8:30 - 9:45 A.M. (Arrive by 8:15am) @ KUPF 209

Exam covers B1 Chapter 4, B2 Chapter 6 Sect 1-4

Bring scientific calculators

To combat cheating, the provost has stipulated  
while students are taking their exams

- 1) students must show their ID upon entering the classroom,
- 2) there is no cell phone use,
- 3) if a student leaves the room during test time, e.g. Men's/Ladies' room, he/she forfeits finishing the exam.

Last class...

Other applications of Newton's Laws

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Today..

Review for Common Exam 2

Example: multiple objects moving together

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**WORKOUT PROBLEM #2 (10 points):**

A truck with the mass of  $M = 5000$  kg is rounding a level curve at a speed of  $v = 20$  m/s.

The coefficient of static friction between the road and the tires is  $\mu_s = 0.41$

- (a) Draw the free-body diagram for the moving truck \_\_\_\_\_
- (b) What is the minimum radius  $R$  of the curve for which the truck can round the level curve without skidding?
- (c) Will the answer for the minimum radius  $R$  change if the truck is loaded and its mass increases by 50% ?
- (d) If the curve is banked rather than flat, does the minimum radius at which the truck can safely turn without skidding at  $v = 20$  m/s increase or decrease compared to the case of a flat curve? Justify your answer using new free-body-diagram and a brief explanation.

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