Test 3 covers Lectures 8-11:

- Draw free body diagrams and write equations that describe force and acceleration with all previous forces plus friction
- Magnitude and direction of static and kinetic friction
- Forces and acceleration including kinetic friction or static friction
- Forces and acceleration with maximized static friction
- Circular motion dynamics
  - In general and for vertical loops and hills
- Relating force and displacement vectors to calculate work done by a single force
- Adding together work done by forces to find total work
- Relating total work to change in kinetic energy
- Potential energy and work done by conservative forces
- Keeping track of mechanical energy when no external work is done
- Keeping track of mechanical energy when external work is done

Expect to encounter the following scenarios on Test 3: