Thursday, January 8/15
Physics 122/121

# Task Sheets

Kepler's Lab - Shelby, Duncan

1. Quiz U2 - S2 -> Rewrite: Friday During IS

2. Electric Fields - Diagrams
   - Strength/Intensity of Electric Fields

---

3. Textbook: Page 646, #11-14
   Page 655, #20-24

4. Electric Potential Energy

5. Electric Potential Difference (Voltage)

6. Electric Current

7. Textbook: Page 696, #4-10

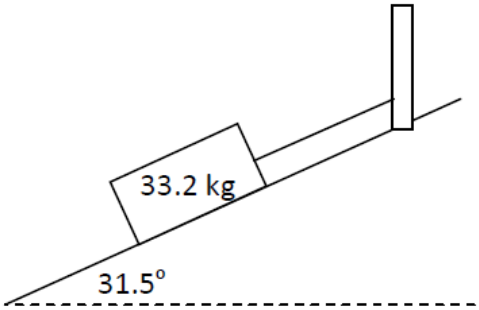
8. Ohm's Law

9. Textbook: Page 714, #21-24

## Formative Assessment - Incline Problem

Thursday - January 8/15

The block in the diagram below is AT REST. However, the tension in the cable is not the only thing holding the block back. Static friction is also applying a force. If the coefficient of static friction is 0.214 determine the magnitude of the tension in the rope.




+T + Ff - Wx = 0
T + uN - Wsin31.5 = 0
T + uWy - mgsin31.5 = 0
T + uWcos31.5 - mgsin31.5 = 0
T + umgcos31.5 - mgsin31.5 = 0
T = mgsin31.5 - umgcos31.5
T = (33.2)(9.80)sin31.5 - (0.214)(33.2)(9.80)cos31.5
T = 111 N

The magnitude of the tension is 111 N.

# Physics 122/121 - Final Exam

Unit 1
-> force problems
- push/pull
- suspended objects
- incline plane
-> static torque
- horizontal (L2)
- involving an angle (L1)
-> relative velocity
-> collisions
- 1 D
  - simple
  - elastic/inelastic
- 2D

Unit 2

-> projectiles
- horizontal
- fired at an angle
  - no trig (L2)
  - trig (L1)
-> SHM
- pendulum
- mass on a spring

-> Law of Universal Gravitation and planetary motion

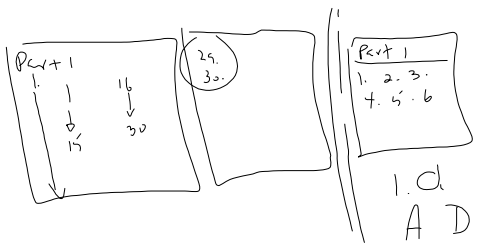
-> circular motion
- horizontal circular motion (L2) unbanked curve
- vertical circular motion (L1) banked curve

Unit 3
-> electrostatics
- electrical charges
- transfer of charge between identical objects
- electric force - Coulomb's Law
  - 2 charges
  - 3 charges
    - in a line
    - (at an angle)
- electric fields
  - diagrams
  - electric field strength
- electric potential energy
- electric potential difference

-> electric current
- conventional current/electron flow
- circuit symbols
- open/closed circuits
- ammeters/voltmeters
- resistance in a wire
- Ohm's Law
- circuits
  - series
  - parallel
  - complex/combination
  - VIR chart
- (power)

---

multiple choice = 30
problems = 11




a) W ↓
b) W + $F_y$
c) W − $F_y$
d) − W + $F_y$