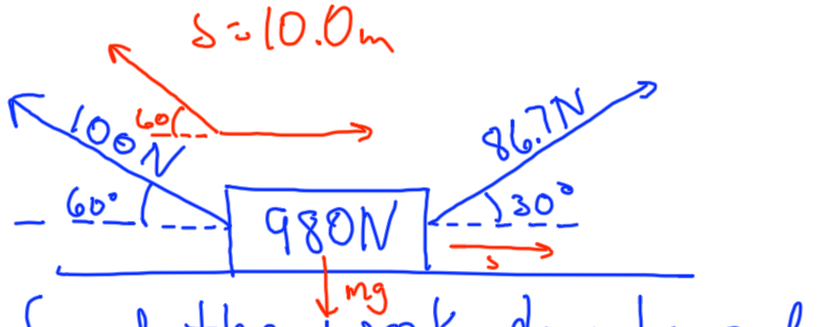
# Reminders 08-05-09:

- Exam 4 Today
- Read Chapters 20 and 21
- Answers to Standardized Test p. 561 1D, 2C, 3A, 4D, 5A, 6C, 7D, 8B, 9B

# Objectives:

- Coulomb's Law
- Electric Fields
- Ohm's Law
- Exam 4




find the work done by each force

$W_g = (980N)(10m)\cos 90 = 0$

$W_N = (N)(10m)\cos 90 = 0$

$W_{86.7N} = (86.7N)(10m)\cos 30 = 750J$

or

$(F_x)(10m)\cos 0 = (75N)(10)J$

$W_{100N} = (100N)(10m)\cos 120 = -500J$

or

$|(F_{x_{100N}})|(10m)\cos 180$

$(50N)(10m)(-1) = -500J$

Work-Energy

$W_{net} = \Delta KE$

Add work done by all forces

$W_{86.7N} + W_{100N} = 750Nm + -500Nm$

$250N = \frac{1}{2}m(v_f^2 - v_i^2)$

$$KE = \frac{1}{2} m v^2$$

magnitude of the velocity vector

$$v^2 = \left(v_x^2 + v_y^2\right)$$

$$TE_i = TE_f$$

Two charges, $q_A$ and $q_B$, are at rest near a positive test charge, $q_T$, of 7.2 μC. The first charge, $q_A$, is a positive charge of 3.6 μC, located 3.5 cm away from $q_T$ at 35°; $q_B$ is a negative charge of −8.9 μC, located 6.8 cm away at 130°.

(a) Determine the magnitude of each of the forces acting on $q_T$.

force caused by qA
190 N
force caused by qB
125 N

(b) Sketch a force diagram. (Do this on paper. Your instructor may ask you to turn in this work.)

Magnitude
236 N
Direction
183°

The two pith balls below each have a mass of 2.5 g and equal charge. One pith ball is suspended by an insulating thread. The other is brought to x = 4.0 cm from the suspended ball. The suspended ball is now hanging with the thread forming an angle of 30.0° with the vertical. The ball is in equilibrium with $F_E$, $F_g$, and $F_T$. Calculate each of the following.