Phys102 Physics for Life Sciences I
Lecture 1

- Course Info
  - Instructor: Michael Chen
    http://www.sfu.ca/~mxchen ➔ Course webpage
    Office hours (P9442): MWF 11:30am-12:00noon; Fri. 4:00-5:00PM.

  - Tutorials: Mandatory (starting next week May 14-16)

  - Grading
    - Weekly assignments (written + Mastering Physics) : 10%
    - i-cliker quizzes: 5%
    - Tutorial attendance: 5%
    - Midterms: 2 x 20% = 40%
    - Final exam: 40%

    Note: No make-up midterms.

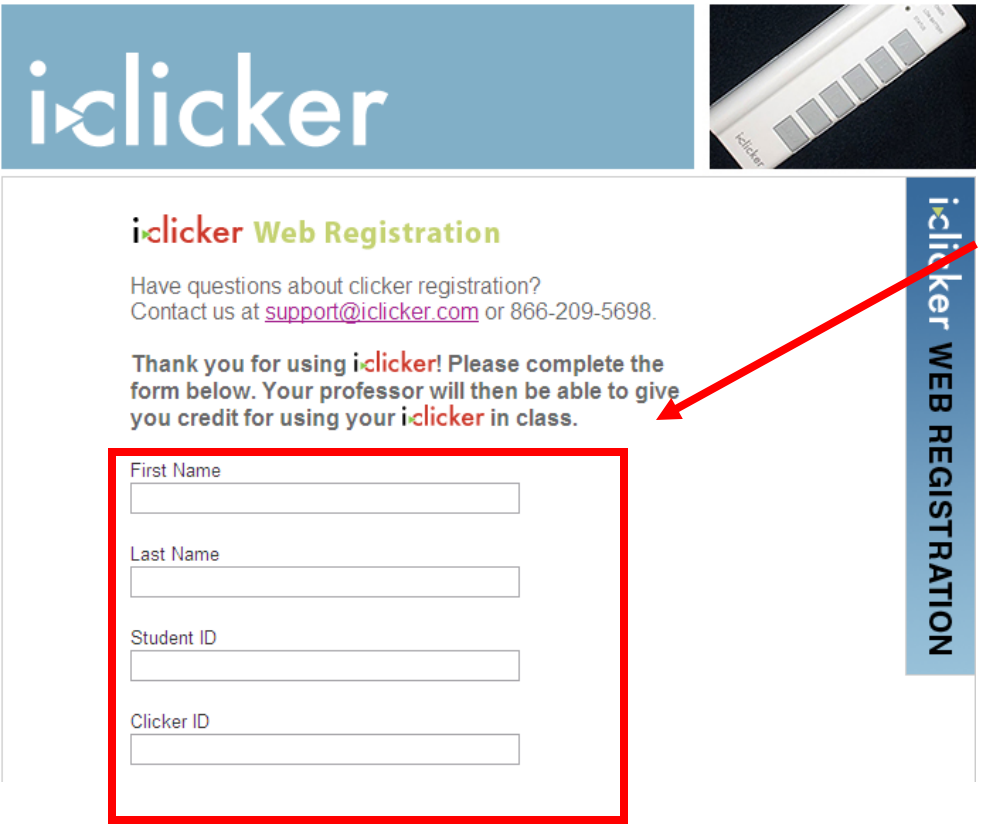
  - Textbook
    - Giancoli *Physics 6th Edition*
    - MasteringPhysics Access Code (included in each new book)

Mastering Physics

- An online personalized assignment system

  Worth about 5% of your total mark
- Get your access code
  - If you buy a new text book, the access code is included;
  - If you buy a used book, you would need to buy the access code separately.
- Register on line: http://www.masteringphysics.com/
  - Use your SFU computing ID or email address as your login name;
  - Enter your 9-digit SFU ID as your student ID.
  - Our course ID is **MPCHEN15176**

Registering your i-clicker online



1. Go to www.iclicker.com.
2. Click "REGISTER."
3. Enter these 4 details and click "submit."

IMPORTANT!!

You MUST enter your 9-digit SFU ID in the STUDENT ID field to ensure proper crediting.

REGISTER AT www.iclicker.com

i-clicker question 1-1

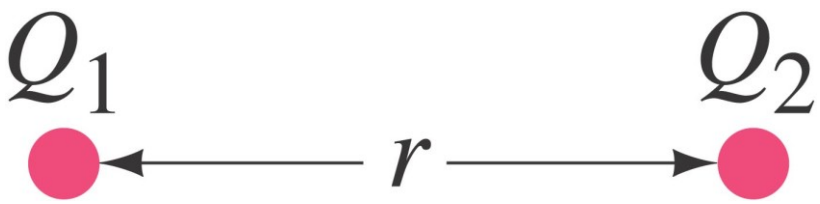
I have the following version of Giancoli:

A) SFU custom edition
B) 4^{th} Edition (Physics for Scientists and Engineers)
C) 6^{th} Edition (Principles with Applications)
D) Two of above
E) None of above

Things to do before next lecture

- Register to Mastering Physics.
- Get an i-clicker, and register online.
- Check the course calendar and read the sections of textbook to be covered (16-1,2,3,4,5,6,8,9). Be ready for clicker quizzes.
- Attempt assignment #1 (both written and online).
- Print out and read the lecture notes (P102Lec02.pdf).

Coulomb's Law



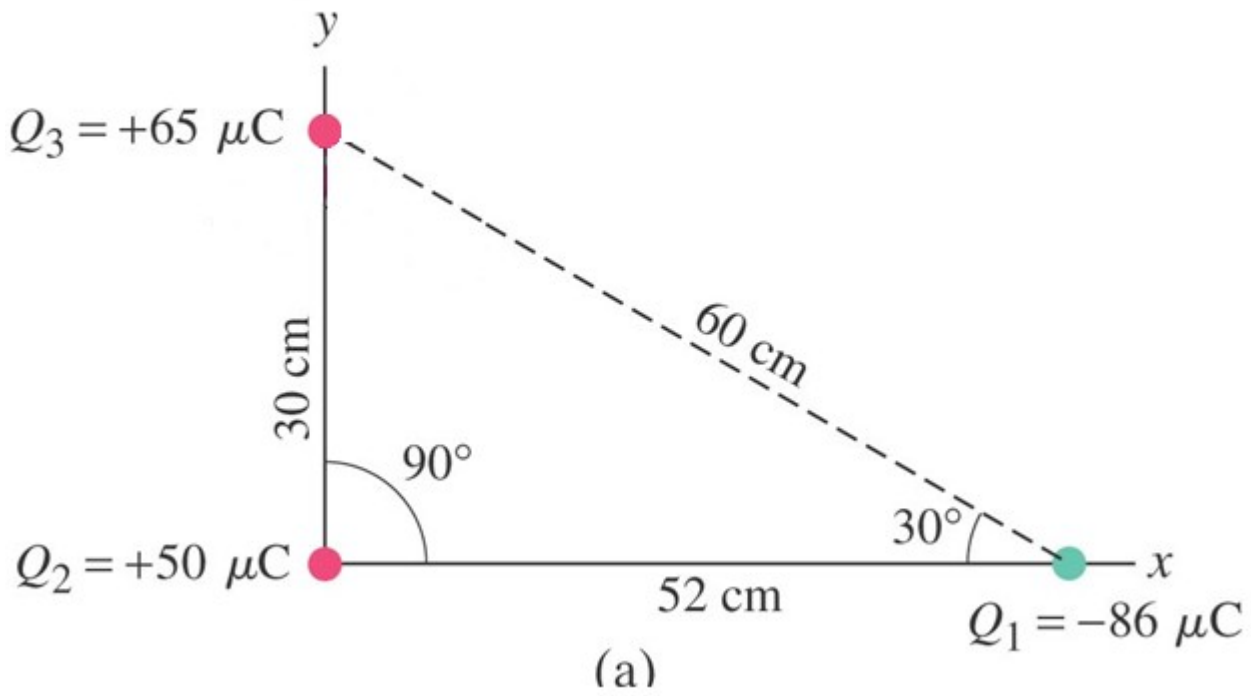
The force is along the line connecting the charges, and is attractive if the charges are opposite, and repulsive if they are the same.

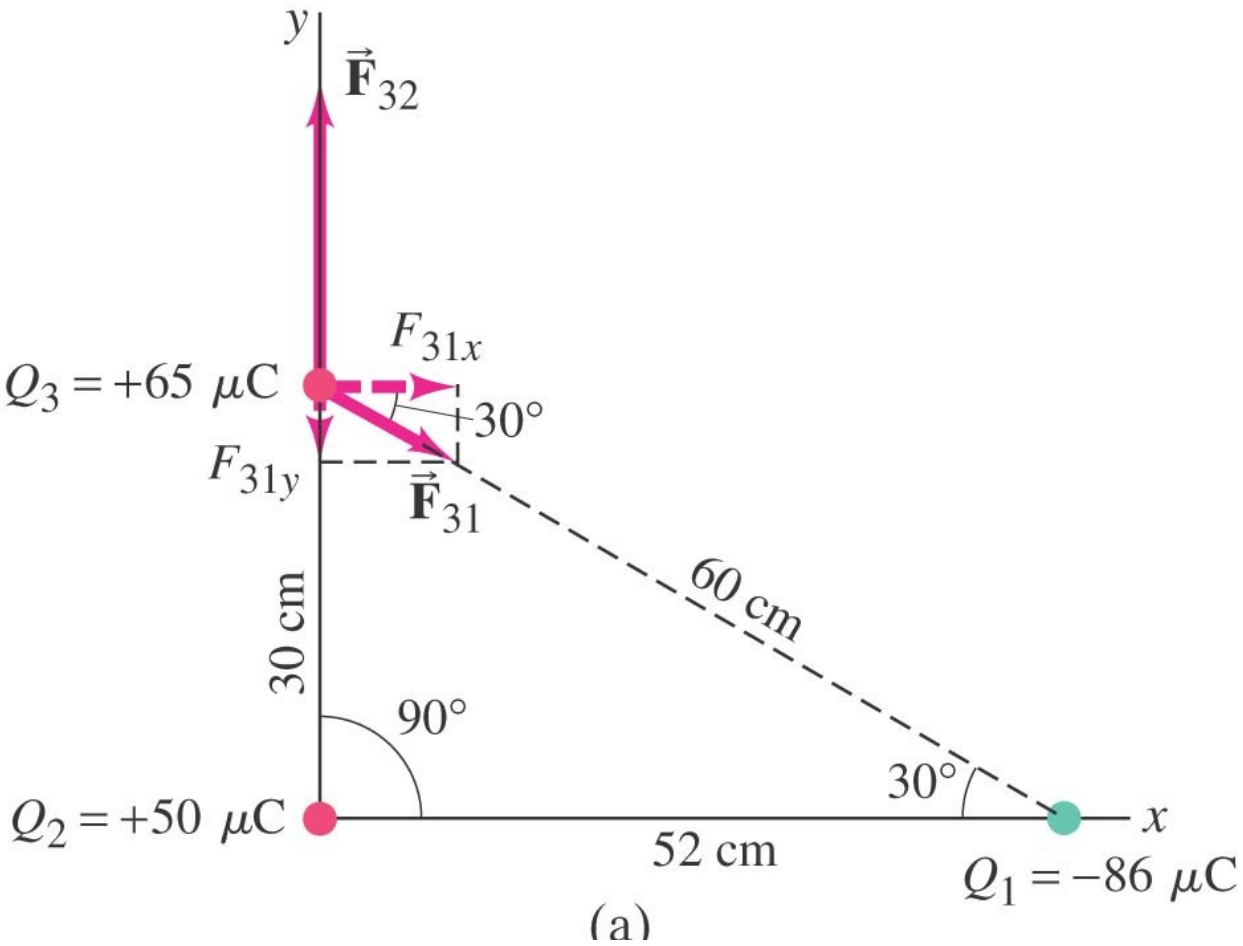
The magnitude of the electric force:

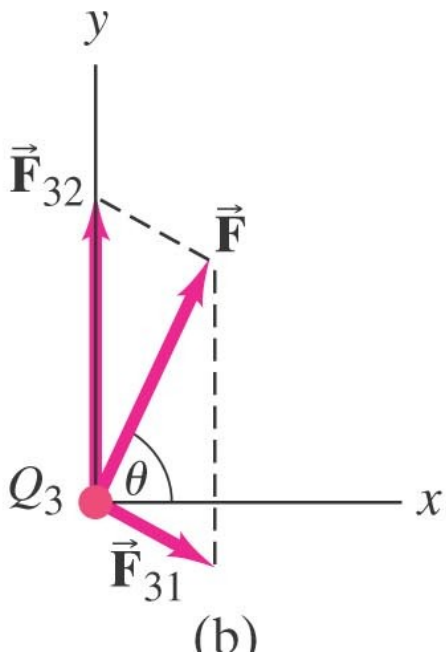
$$F = \frac{1}{4\pi\varepsilon_0}\frac{Q_1 Q_2}{r^2} \quad \text{where} \quad \varepsilon_0 = 8.85\times10^{-12} C^2 / N\cdot m^2$$

Example 16-4: Electric force using vector components.

Calculate the net electrostatic force on charge Q_3 shown in the figure due to the charges Q_1 and Q_2.




y
$\vec{\mathbf{F}}_{32}$
F_{31x}
$Q_3 = +65\ \mu C$
30°
F_{31y}
$\vec{\mathbf{F}}_{31}$
60 cm
30 cm
90°
30°
$Q_2 = +50\ \mu C$
x
52 cm
$Q_1 = -86\ \mu C$
(a)


y
$\vec{\mathbf{F}}_{32}$
$\vec{\mathbf{F}}$
Q_3
θ
x
$\vec{\mathbf{F}}_{31}$
(b)