

© 2003 Thomson - Brooks Cole



$$E = \frac{kq}{r^2}$$

$$\cos \theta = \frac{a}{h} = \frac{.6}{.63}$$

$$\sin \theta = \frac{o}{h}$$

$$E_3 = \frac{kq_3}{r^2} = \frac{9 \times 10^9 (3 \times 10^{-9})}{.2^2} = 675 \frac{N}{C}$$

$$E_5 = \frac{9 \times 10^9 (5 \times 10^{-9})}{.63^2} = 113.3 \frac{N}{C}$$

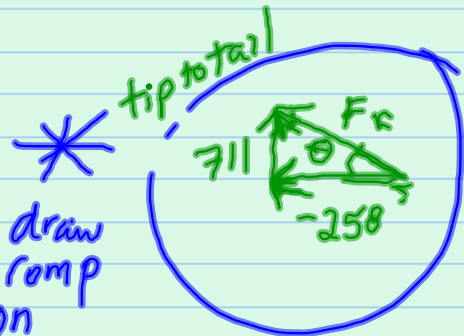
$$E_6 = \frac{9 \times 10^9 (6 \times 10^{-9})}{.6^2} = 150 \frac{N}{C}$$

$$\Sigma E_x = -E_6 - E_5 \left( \frac{.6}{.63} \right) = -150 - 113 \left( \frac{.6}{.63} \right) = -258 \frac{N}{C}$$

$$\Sigma E_y = E_3 + E_5 \left( \frac{.2}{.63} \right) = 675 + 113 \left( \frac{.2}{.63} \right) = 711 \frac{N}{C}$$

$$E_r = \sqrt{711^2 + 258^2} = 756 \frac{N}{C}$$

$$\theta = \tan^{-1} \frac{711}{258} = 70^\circ$$



\* draw comp on rt Δ