

$$Q = +1.50 \times 10^{-8} \text{ C}$$

$$V_1 = 190 \text{ V}$$

$$V_2 = 75.0 \text{ V}$$

Find r_1 :

$$V = \frac{k_e \cdot Q}{r}$$

$$(190 \text{ V}) = \frac{(9.0 \times 10^9 \text{ N}\cdot\text{m}^2/\text{C}^2)(1.5 \times 10^{-8} \text{ C})}{r_1}$$

$$r_1 = .71 \text{ m}$$

Find r_2 :

$$V = \frac{k_e \cdot Q}{r}$$

$$(75 \text{ V}) = \frac{(9.0 \times 10^9 \text{ N}\cdot\text{m}^2/\text{C}^2)(1.5 \times 10^{-8} \text{ C})}{r_2}$$

$$r_2 = 1.8 \text{ m}$$

$$\Delta r = r_2 - r_1$$

$$= 1.8 \text{ m} - .71 \text{ m}$$

$$\Delta r = 1.09 \text{ m}$$