



# Capacitance of Parallel Plate Capacitor

$$V = Ed \quad E = 4\pi kQ/A$$

(Between two large plates)

$$\text{So: } V = 4\pi kQd/A$$

$$\text{Recall: } C \equiv Q/V$$

$$\text{So: } C = A/(4\pi kd)$$

Recall:

$$\epsilon_0 = 1/(4\pi k) = 8.85 \times 10^{-12} \text{ C}^2/\text{Nm}^2$$

$$C = \epsilon_0 A/d$$

Parallel plate capacitor

