

**Homework Assignment #16**

(Note: due Wed, Oct 5, 2022, at the beginning of class)

1. Griffiths 3.13
2. Griffiths 3.15 Hint:

$$\cos(3\theta) = 4 \{\cos(\theta)\}^3 - 3 \cos(\theta)$$

3. Griffiths 3.19

Hint: For getting the surface charge density use Eq. (2.36) from page 90. This equation is always applicable, not only for the surface of a conductor. Eq. (2.36) is

$$\sigma = -\epsilon_0 \left( \frac{\partial V_{\text{above}}}{\partial n} - \frac{\partial V_{\text{below}}}{\partial n} \right) \Big|_{\text{at surface}}$$