QUIZ #3   **25 points, 18 minutes**   SCORE_____
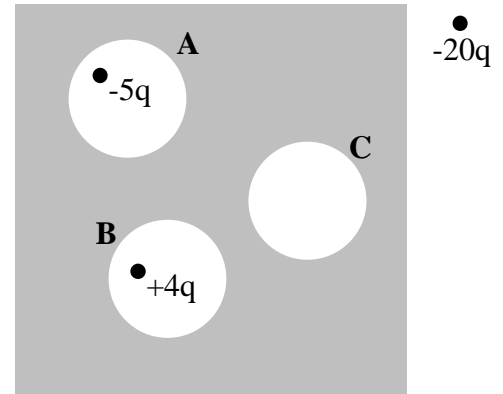
1) [9 points] Consider the cubical conductor shown in cross-section. It has three cavities (holes) inside marked A, B and C and is uncharged. Three point charges are present as shown.

(a) How much charge is on the inner surface of cavity A?

(b) How much charge is on the inner surface of cavity C?

(c) How much charge is on the outer surface of the conductor?

2) [16 points] In class, we found the electric field from a large, thin sheet of charge. Here, you are to find the electric field outside a large, *thick* sheet of charge. The sheet thickness is d and its volume charge density is $-\rho$.

(a) Sketch the electric field lines outside the sheet.
(b) Find the electric field magnitude outside the sheet.
    [Hint: Use the same approach as for a thin sheet.]