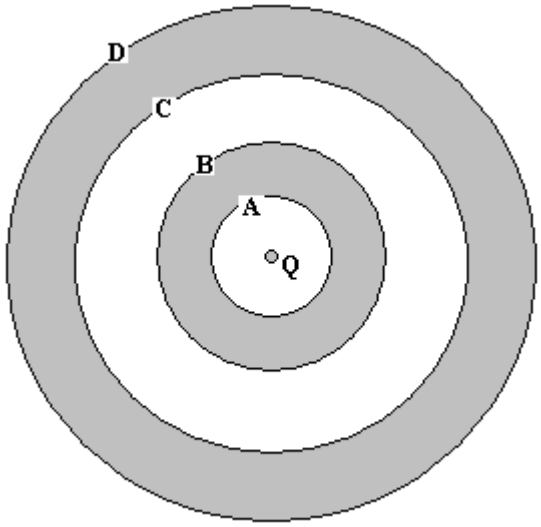
Physics 51 Proficiency Test 2(sample) **(Time: 10 minutes)** **25 points**

By Todd Sauke

Name _____ Section # _____

Two concentric, hollow, spherical conducting shells are placed as shown in the figure at right. A total charge of –200 nano-Coulombs (nC = 10^{-9} C) is placed on the outer conductor, a total charge of +500 nC is placed on the inner conductor, and a charge Q = -400 nC is placed at the very center. First, what is the magnitude of the E-field (at equilibrium)on the interior of each conductor?



_____ N/C

What is the net charge on the **interior** of each conductor? _____ C

Find the total charge on each of the surfaces shown; A, B, C, and D.

Charge on A _____nC

Charge on B _____nC

Charge on C _____nC

Charge on D _____nC