0 points for No Posts or Late Posts.

1. What is meant by a 'high degree of symmetry' when it comes to Gauss' Law problems?
2. When choosing a Gaussian surface, why is the direction of the unit vector **n** hat so important and what are really the only two directions you want to chose it to be?

1) High degree of symmetry means that you can use Gauss's Law to determine the magnitude of the electric field. Due to the symmetry, that means the flux cancels out for equal magnitude and opposite direction.

2) The direction of the unit vector n is important because the dot product should equal zero. This makes the problem so much easier because of symmetry. So the only two directions you want it to be is perpendicular, or parallel.

1. The term "high degree of symmetry" refers to the fact that gaussian surfaces are usually(if not always) symmetric. If we were using a box as our gaussian surface, then all eight sides would be symmetric w.r.t. the side opposite.

2. our unit vector is so important because it is what makes Gauss's Law a simplified approach to solving electric field problems. Our goal is to get our unit vector to equal zero between the dot product. If we pick a unit vector that is not parallel or perpendicular to the E-field, then we are really complicating our attempt at solving the problem.

1. A "high degree of symmetry" in problems involving Gauss' Law means that the vector components of the flux defined at some arbitrarily small area dA cancel out due to equal magnitudes and opposite directions. This symmetry makes Gauss' law problems and calculations of net electric flux extremely easier because you only need to calculate the perpendicular vector component at the surface.

2. When choosing a Gaussian surface, the direction of the unit vector n hat is important because it defines the direction that flux passes through the surface, and choosing to make it perpendicular makes the problem easier due to symmetry. Additionally, the enclosed charge determines the direction, positive if it is an outward electric flux or negative if it is an inward electric flux.

Hello Class,

1. A high degree of symmetry means that Gauss's Law alone can be used to determine the magnitude of the electric field. Also, the direction from the problems must be announced form the symmetry of each different situation.

2. N hat is so important, because it gives us the direction that the flux passes through the surface. The only two directions you want to choose are along the electric field and perpendicular to the electric field.

Thanks,

1. In reference to Gauss' Law problems, a high degree of symmetry refers to the requirement of having the electric field at all points along the Gaussian surface equal in magnitude and perpendicular to the surface.

2. n hat has to be perpendicular to electric flux weather is going to same direction or opposite direction . **E . n** dA=+,-EA if **E** and **n** are parallel and where theta is equal to 180 or 0 .

1. If the charge distribution has a high degree of symmetry, Gauss's law alone can be used to determine the magnitude of the electric field. In addition, the direction in the problems must be deduced from the symmetry of each different situation.

2. n is important because along with that direction only flux will pass through the gauss surface.
the only 2 directions that are important are along the e-field 4 perpendicular to e-field. flux will be given in later cases due to the fact that dot product will be zero

1. Guass' Law is logically equivalent to Coulomb's Law, but its use greatly simplifies with a high degree of symmetry. Symmetry determines the direction of the electric field.

2. The direction is important because you want the dot product to be E da or zero. The only directions you want it to be are parallel or perpendicular.