Warm-Up for February 21st, 2022

Dr. Jordan Hanson - Whittier College Dept. of Physics and Astronomy

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1 Memory Bank

1. Charge and charge density: $\int d\tau' \rho(\vec{r'}) = Q$
2. Gauss' Law (integral version): $\oint \vec{E} \cdot d\vec{a} = Q/\epsilon_0$

2 Gauss' Law

1. Suppose there is a point charge of magnitude q at the origin, and a line of charge with linear charge density $-\lambda$ between $-l/2$ and $l/2$ along the x-axis. Find the **E**-field at a point P above the origin on the z-axis.