P142 - Fall 2010 - Problem Set 3

① The gravitational field $\vec{g}$ is the force per unit mass on a test mass. For a point mass m at the origin, the gravitational field at some position $\vec{r}$ is

$$\vec{g} = -\frac{G m}{r^2}\hat{r}$$

For a spherical Gaussian surface surrounding mass m, determine the gravitational analog of Gauss' Law.

② 24-36

③ 24-47

④ 24-37

⑤ 24-41

⑥ 24-51

⑥ 25-1

⑦ 25-3

⑧ 25-6

⑨ 25-18

⑩ 25-28