

15 минут о математике



$$e^{i(\omega t - \vec{k} \cdot \vec{r})}$$
A diagram illustrating a wave function. A horizontal axis labeled r represents position. A sinusoidal wave is plotted above and below the axis. The wave is represented by a solid line. Vertical arrows of varying lengths are drawn from the horizontal axis to the wave, indicating the amplitude of the wave at different points. The arrows pointing downwards are labeled E , representing the electric field vector. The arrows pointing upwards are also labeled E , representing the electric field vector. The wave is labeled with the mathematical expression $e^{i(\omega t - \vec{k} \cdot \vec{r})}$.

Решение практических задач



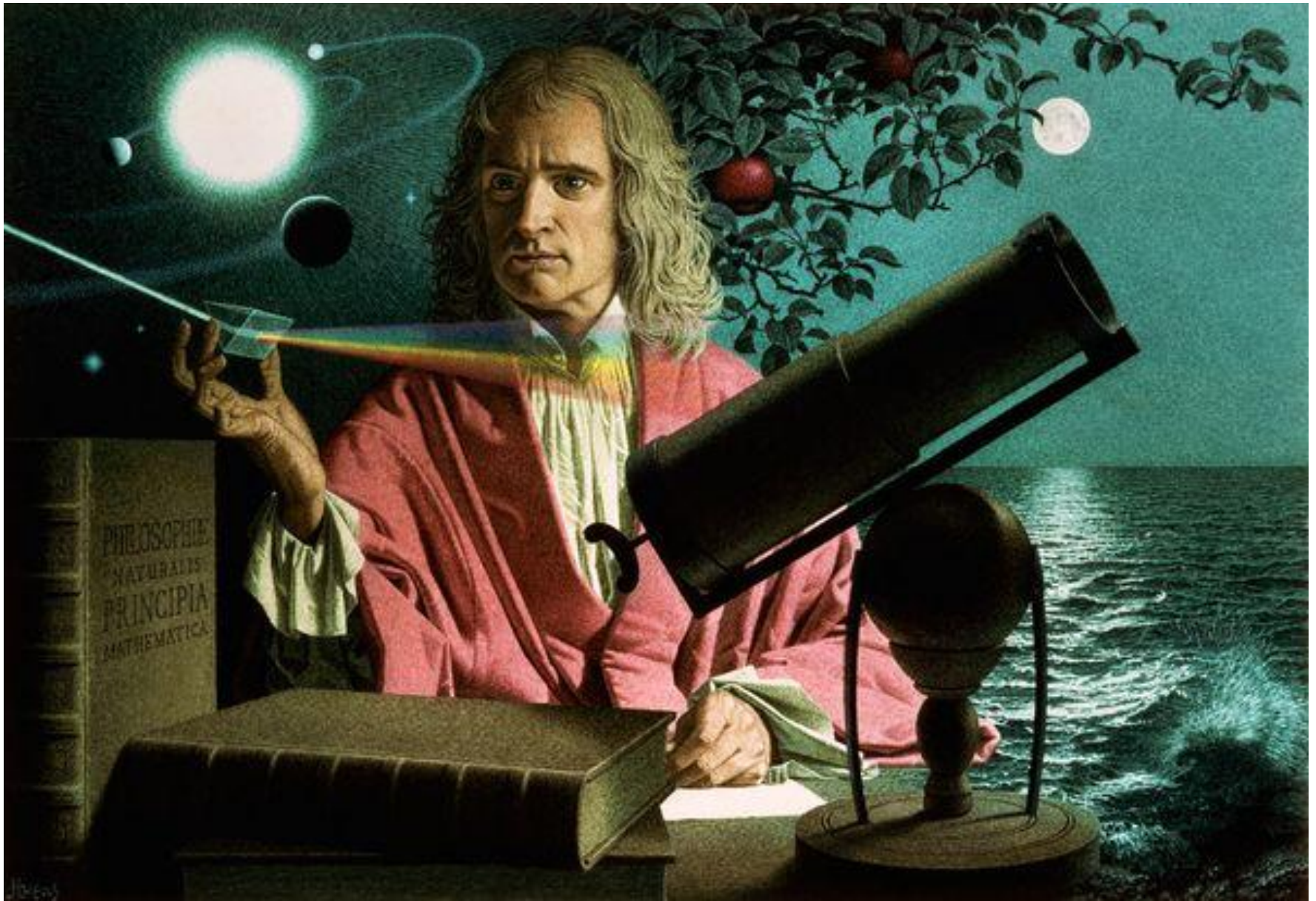
Греческий подход



Движение планет



Научный метод



Электричество



Получившиеся уравнения

$$\oint \vec{E} \cdot d\vec{a} = \frac{Q_{enc}}{\epsilon_0}$$

$$\oint \vec{E} \cdot d\vec{l} = - \int \frac{\partial \vec{B}}{\partial t} \cdot d\vec{a}$$

$$\oint \vec{B} \cdot d\vec{a} = 0$$

$$\oint \vec{B} \cdot d\vec{l} = \mu_0 I_{enc}$$

Система уравнений Максвелла

$$\oint \vec{E} \cdot d\vec{a} = \frac{Q_{enc}}{\epsilon_0}$$

$$\oint \vec{E} \cdot d\vec{l} = - \int \frac{\partial \vec{B}}{\partial t} \cdot d\vec{a}$$

$$\oint \vec{B} \cdot d\vec{a} = 0$$

$$\oint \vec{B} \cdot d\vec{l} = \mu_0 I_{enc} + \mu_0 \epsilon_0 \int \frac{\partial \vec{E}}{\partial t} \cdot d\vec{a}$$

Электромагнитные волны



Математическое моделирование

