## Урок 2, задание 2

$$U = \frac{256}{x} + \frac{x^2}{y} + \frac{y^2}{z} + z^2$$

$$U'_x = \frac{2x}{y} - \frac{256}{x^2} \rightarrow U''_{xy} = -\frac{2x}{y^2}$$

$$U''_{xx} = \frac{512}{x^3} + \frac{2}{y}$$

$$U'_y = \frac{2y}{z} - \frac{x^2}{y^2} \rightarrow U''_{yx} = -\frac{2x}{y^2}; \quad U''_{yz} = -\frac{2y}{z^2}$$

$$U''_{yy} = \frac{2}{z} + \frac{2x^2}{y^3}$$

$$U'_z = 2z - \frac{y^2}{z^2} \rightarrow U''_{zy} = -\frac{2y}{z^2}$$

$$U''_{zz} = 2 + \frac{2y^2}{z^3}$$

$$U''_{xy} = U''_{yx}\left(-\frac{2x}{y^2}\right); \quad U''_{yz} = U''_{zy}\left(-\frac{2y}{z^2}\right)$$