

Homework 5

1. (10 points) Show that for the Einstein equation in the vacuum (outside of star)

$$R = 0.$$

2. (20 points) Using Schwarzschild solutions for the observer outside of star $e^{2\psi} = 1 - \frac{\text{Const}}{r}$ and the weak Gravity limit, calculate Const (see lecture 8)

3. (30 points) Calculate the proportionality constant K in Einstein equation (see Lecture 8)