

Homework 7

1. (30 points) Obtain the Friedman - Lamaitre - Roberson - Walker metric :

$$g_{\mu\nu} = \begin{pmatrix} 1 & 0 & 0 & 0 \\ 0 & -\frac{a[t]^2}{1-kr^2} & 0 & 0 \\ 0 & 0 & -a[t]^2 r^2 & 0 \\ 0 & 0 & 0 & -a[t]^2 r^2 (\text{Sin}[\theta])^2 \end{pmatrix}$$