Schwarzschild Metric in spherical coordinates in its flatter form:

$\boxed{x^\mu}$

$x^0 = T.$
$x^1 = R.$
$x^2 = \theta.$
$x^3 = \phi.$

$\boxed{g_{\mu\nu}}$

$g_{00} = \frac{r(R)}{r(R) - 2m}.$
$g_{01} = 0.$
$g_{02} = 0.$
$g_{03} = 0.$
$g_{10} = 0.$
$g_{11} = -\frac{r(R) - 2m}{r(R)}.$
$g_{12} = 0.$
$g_{13} = 0.$
$g_{20} = 0.$
$g_{21} = 0.$
$g_{22} = -r(R)^2.$
$g_{23} = 0.$
$g_{30} = 0.$
$g_{31} = 0.$
$g_{32} = 0.$
$g_{33} = -r(R)^2 \sin(\theta)^2.$

$\boxed{\surd = \sqrt{-\det(g_{\mu\nu})}}$

$\surd = \sqrt{r(R)^4 \sin(\theta)^2}.$

$\boxed{g^{\mu\nu}}$

$g^{00} = \frac{r(R) - 2m}{r(R)}.$
$g^{01} = 0.$
$g^{02} = 0.$
$g^{03} = 0.$
$g^{10} = 0.$
$g^{11} = -\frac{r(R)}{r(R) - 2m}.$
$g^{12} = 0.$
$g^{13} = 0.$
$g^{20} = 0.$
$g^{21} = 0.$
$g^{22} = -\frac{1}{r(R)^2}.$
$g^{23} = 0.$
$g^{30} = 0.$
$g^{31} = 0.$
$g^{32} = 0.$
$g^{33} = -\frac{1}{r(R)^2 \sin(\theta)^2}.$

$\boxed{\Gamma^{\sigma}_{\mu\nu}}$

$\Gamma^0_{00} = 0.$
$\Gamma^0_{01} = -\frac{r'(R)m}{r(R)(r(R) - 2m)}.$
$\Gamma^0_{02} = 0.$
$\Gamma^0_{03} = 0.$
$\Gamma^0_{10} = -\frac{r'(R)m}{r(R)(r(R) - 2m)}.$
$\Gamma^0_{11} = 0.$
$\Gamma^0_{12} = 0.$
$\Gamma^0_{13} = 0.$
$\Gamma^0_{20} = 0.$
$\Gamma^0_{21} = 0.$
$\Gamma^0_{22} = 0.$
$\Gamma^0_{23} = 0.$
$\Gamma^0_{30} = 0.$
$\Gamma^0_{31} = 0.$
$\Gamma^0_{32} = 0.$
$\Gamma^0_{33} = 0.$

$\Gamma^1_{00} = -\frac{r'(R)r(R)m}{(r(R) - 2m)^3}.$
$\Gamma^1_{01} = 0.$
$\Gamma^1_{02} = 0.$
$\Gamma^1_{03} = 0.$
$\Gamma^1_{10} = 0.$
$\Gamma^1_{11} = \frac{r'(R)m}{r(R)(r(R) - 2m)}.$
$\Gamma^1_{12} = 0.$
$\Gamma^1_{13} = 0.$
$\Gamma^1_{20} = 0.$
$\Gamma^1_{21} = 0.$
$\Gamma^1_{22} = -\frac{r'(R)r(R)^2}{r(R) - 2m}.$
$\Gamma^1_{23} = 0.$
$\Gamma^1_{30} = 0.$
$\Gamma^1_{31} = 0.$
$\Gamma^1_{32} = 0.$
$\Gamma^1_{33} = -\frac{r'(R)r(R)^2 \sin(\theta)^2}{r(R) - 2m}.$

$\Gamma^2_{00} = 0.$
$\Gamma^2_{01} = 0.$
$\Gamma^2_{02} = 0.$
$\Gamma^2_{03} = 0.$
$\Gamma^2_{10} = 0.$
$\Gamma^2_{11} = 0.$
$\Gamma^2_{12} = \frac{r'(R)}{r(R)}.$
$\Gamma^2_{13} = 0.$
$\Gamma^2_{20} = 0.$
$\Gamma^2_{21} = \frac{r'(R)}{r(R)}.$
$\Gamma^2_{22} = 0.$
$\Gamma^2_{23} = 0.$
$\Gamma^2_{30} = 0.$
$\Gamma^2_{31} = 0.$
$\Gamma^2_{32} = 0.$
$\Gamma^2_{33} = -\cos(\theta)\sin(\theta).$

$\Gamma^3_{00} = 0.$
$\Gamma^3_{01} = 0.$
$\Gamma^3_{02} = 0.$
$\Gamma^3_{03} = 0.$
$\Gamma^3_{10} = 0.$
$\Gamma^3_{11} = 0.$
$\Gamma^3_{12} = 0.$
$\Gamma^3_{13} = \frac{r'(R)}{r(R)}.$
$\Gamma^3_{20} = 0.$
$\Gamma^3_{21} = 0.$
$\Gamma^3_{22} = 0.$
$\Gamma^3_{23} = \frac{\cos(\theta)}{\sin(\theta)}.$
$\Gamma^3_{30} = 0.$
$\Gamma^3_{31} = \frac{r'(R)}{r(R)}.$
$\Gamma^3_{32} = \frac{\cos(\theta)}{\sin(\theta)}.$
$\Gamma^3_{33} = 0.$

$\boxed{R_{\mu\nu}}$

$$R_{00} = \frac{r''(R)r(R)^2m - 4r'(R)^2m^2 - 2r''(R)r(R)m^2}{(r(R)-2m)^4}.$$

$R_{01} = 0.$
$R_{02} = 0.$
$R_{03} = 0.$
$R_{10} = 0.$

$$R_{11} = -\frac{9r''(R)r(R)^2m - 4r'(R)^2m^2 - 2r''(R)r(R)^3 - 10r''(R)r(R)m^2}{r(R)^2(r(R)-2m)^2}.$$

$R_{12} = 0.$
$R_{13} = 0.$
$R_{20} = 0.$
$R_{21} = 0.$

$$R_{22} = -\frac{2r''(R)r(R)^2m - r'(R)^2r(R)^2 + 4r'(R)^2r(R)m + r(R)^2 - r''(R)r(R)^3 - 4r(R)m + 4m^2}{(r(R)-2m)^2}.$$

$R_{23} = 0.$
$R_{30} = 0.$
$R_{31} = 0.$
$R_{32} = 0.$

$$R_{33} = \frac{r''(R)r(R)^3\sin(\theta)^2 - 4m^2\sin(\theta)^2 + 4r(R)m\sin(\theta)^2 - 2r''(R)r(R)^2m\sin(\theta)^2 + r'(R)^2r(R)^2\sin(\theta)^2 - r(R)^2\sin(\theta)^2 - 4r'(R)^2r(R)m\sin(\theta)^2}{(r(R)-2m)^2}.$$

$\boxed{R^{\mu}{}_{\nu}}$

$$R^0{}_0 = -4\frac{r'(R)^2m^2}{r(R)(r(R)-2m)^3} + \frac{r''(R)r(R)m}{(r(R)-2m)^3} - 2\frac{r''(R)m^2}{(r(R)-2m)^3}.$$

$R^0{}_1 = 0.$
$R^0{}_2 = 0.$
$R^0{}_3 = 0.$
$R^1{}_0 = 0.$

$$R^1{}_1 = -4\frac{r'(R)^2m^2}{r(R)(r(R)-2m)^3} - 2\frac{r''(R)r(R)^2}{(r(R)-2m)^3} + 9\frac{r''(R)r(R)m}{(r(R)-2m)^3} - 10\frac{r''(R)m^2}{(r(R)-2m)^3}.$$

$R^1{}_2 = 0.$
$R^1{}_3 = 0.$
$R^2{}_0 = 0.$
$R^2{}_1 = 0.$

$$R^2{}_2 = 4\frac{m^2}{r(R)^2(r(R)-2m)^2} + 4\frac{r'(R)^2m}{r(R)(r(R)-2m)^2} + \frac{1}{(r(R)-2m)^2} - \frac{r'(R)^2}{(r(R)-2m)^2} - 4\frac{m}{r(R)(r(R)-2m)^2} - \frac{r''(R)r(R)}{(r(R)-2m)^2} + 2\frac{r''(R)m}{(r(R)-2m)^2}.$$

$R^2{}_3 = 0.$
$R^3{}_0 = 0.$
$R^3{}_1 = 0.$
$R^3{}_2 = 0.$

$$R^3{}_3 = 4\frac{m^2}{r(R)^2(r(R)-2m)^2} + 4\frac{r'(R)^2m}{r(R)(r(R)-2m)^2} + \frac{1}{(r(R)-2m)^2} - \frac{r'(R)^2}{(r(R)-2m)^2} - 4\frac{m}{r(R)(r(R)-2m)^2} - \frac{r''(R)r(R)}{(r(R)-2m)^2} + 2\frac{r''(R)m}{(r(R)-2m)^2}.$$

$\boxed{R}$

$$R = -24\frac{r'(R)^2m^2}{r(R)(r(R)-2m)^3} + 2\frac{r(R)}{(r(R)-2m)^3} - 12\frac{m}{(r(R)-2m)^3} - 2\frac{r'(R)^2r(R)}{(r(R)-2m)^3} + 12\frac{r'(R)^2m}{(r(R)-2m)^3} - 16\frac{m^3}{r(R)^2(r(R)-2m)^3} - 4\frac{r''(R)r(R)^2}{(r(R)-2m)^3} + 24\frac{m^2}{r(R)(r(R)-2m)^3} + 18\frac{r''(R)r(R)m}{(r(R)-2m)^3} - 20\frac{r''(R)m^2}{(r(R)-2m)^3}.$$

$\boxed{G^{\mu}{}_{\nu}}$

$$G^{0}{}_{0} = -4\frac{m^2}{r(R)^2(r(R)-2m)^2} - 4\frac{r'(R)^2 m}{r(R)(r(R)-2m)^2} - \frac{1}{(r(R)-2m)^2} + \frac{r'(R)^2}{(r(R)-2m)^2} + 4\frac{m}{r(R)(r(R)-2m)^2} + 2\frac{r''(R)r(R)}{(r(R)-2m)^2} - 4\frac{r''(R)m}{(r(R)-2m)^2}.$$

$G^{0}{}_{1} = 0.$
$G^{0}{}_{2} = 0.$
$G^{0}{}_{3} = 0.$
$G^{1}{}_{0} = 0.$

$$G^{1}{}_{1} = -4\frac{m^2}{r(R)^2(r(R)-2m)^2} - 4\frac{r'(R)^2 m}{r(R)(r(R)-2m)^2} - \frac{1}{(r(R)-2m)^2} + \frac{r'(R)^2}{(r(R)-2m)^2} + 4\frac{m}{r(R)(r(R)-2m)^2}.$$

$G^{1}{}_{2} = 0.$
$G^{1}{}_{3} = 0.$
$G^{2}{}_{0} = 0.$
$G^{2}{}_{1} = 0.$

$$G^{2}{}_{2} = 4\frac{r'(R)^2 m^2}{r(R)(r(R)-2m)^3} + \frac{r''(R)r(R)^2}{(r(R)-2m)^3} - 5\frac{r''(R)r(R)m}{(r(R)-2m)^3} + 6\frac{r''(R)m^2}{(r(R)-2m)^3}.$$

$G^{2}{}_{3} = 0.$
$G^{3}{}_{0} = 0.$
$G^{3}{}_{1} = 0.$
$G^{3}{}_{2} = 0.$

$$G^{3}{}_{3} = 4\frac{r'(R)^2 m^2}{r(R)(r(R)-2m)^3} + \frac{r''(R)r(R)^2}{(r(R)-2m)^3} - 5\frac{r''(R)r(R)m}{(r(R)-2m)^3} + 6\frac{r''(R)m^2}{(r(R)-2m)^3}.$$

$\boxed{G}$

$$G = 24\frac{r'(R)^2 m^2}{r(R)(r(R)-2m)^3} - 2\frac{r(R)}{(r(R)-2m)^3} + 12\frac{m}{(r(R)-2m)^3} + 2\frac{r'(R)^2 r(R)}{(r(R)-2m)^3} - 12\frac{r'(R)^2 m}{(r(R)-2m)^3} + 16\frac{m^3}{r(R)^2(r(R)-2m)^3} + 4\frac{r''(R)r(R)^2}{(r(R)-2m)^3} - 24\frac{m^2}{r(R)(r(R)-2m)^3} - 18\frac{r''(R)r(R)m}{(r(R)-2m)^3} + 20\frac{r''(R)m^2}{(r(R)-2m)^3}.$$

$\boxed{G^{\mu}{}_{\nu:\mu} = 0}$

$G^{\mu}{}_{0:\mu} = 0.$
$G^{\mu}{}_{1:\mu} = 0.$
$G^{\mu}{}_{2:\mu} = 0.$
$G^{\mu}{}_{3:\mu} = 0.$

$\boxed{g^{\mu\nu}\,\Gamma^{\lambda}_{\mu\nu} = 0?}$

$g^{\mu\nu}\,\Gamma^{0}_{\mu\nu} = 0.$

$$g^{\mu\nu}\,\Gamma^{1}_{\mu\nu} = -6\frac{r'(R)r(R)^6 m}{(r(R)-2m)^4} + 12\frac{r'(R)r(R)^5 m^2\sin(\theta)^4}{(r(R)-2m)^4} - 24\frac{r'(R)m^3}{(r(R)-2m)^4} - 6\frac{r'(R)r(R)^6 m\sin(\theta)^4}{(r(R)-2m)^4} + 8\frac{r'(R)r(R)m^2}{(r(R)-2m)^4} - 16\frac{r'(R)m^5}{r(R)^2(r(R)-2m)^4} + 12\frac{r'(R)r(R)^5 m^2}{(r(R)-2m)^4} + 32\frac{r'(R)m^4}{r(R)(r(R)-2m)^4} - 8\frac{r'(R)r(R)^4 m^3}{(r(R)-2m)^4} + \frac{r'(R)r(R)^7}{(r(R)-2m)^4} - 2\frac{r'(R)r(R)^2 m}{(r(R)-2m)^4} + \frac{r'(R)r(R)^7\sin(\theta)^4}{(r(R)-2m)^4} - 8\frac{r'(R)r(R)^4 m^3\sin(\theta)^4}{(r(R)-2m)^4}.$$

$g^{\mu\nu}\,\Gamma^{2}_{\mu\nu} = \cos(\theta)r(R)^2\sin(\theta)^3.$
$g^{\mu\nu}\,\Gamma^{3}_{\mu\nu} = 0.$