

Homework 4: Due at the beginning of class on Friday March 8th

You must write out clear, logical, and complete answers to the homework questions. You may work together on solving the homework problems, but you must write up the final answer on your own.

The scoring of each homework problem will be out of 3 points: 3 points will be given for a complete, 100% correct solution; 2 points will be given for a largely correct (and still clearly explained) solution, 1 point will be given for a poorly explained, incorrect solution. Excellent solutions by students may be photocopied and used as homework solutions available to everyone.

- Given the properties of the Riemann tensor discussed in class (That is, $R_{abcd} = -R_{bacd}$, $R_{abcd} = -R_{abdc}$, and $R_{[abc]d} = 0$). Show that $R_{abcd} = R_{cdab}$
- Carroll, chapter 3, exercise 1
- Carroll, chapter 3, exercise 3
- Carroll, chapter 3, exercise 5
- Carroll, chapter 3, exercise 6