College of the Holy Cross, Spring Semester, 2019
Math 134 Worksheet 1
Due Tuesday, January 29

1. Calculate $L_{4}, M_{4}$ and $R_{4}$ for $f(x)=\sqrt{x+2}$ over the interval $[2,4]$.
2. Let $f(x)=\sqrt{x}$ on the interval $[1,5]$. Fill in the blank. Express your answer in terms of $j$ and $N$.

$$
R_{N}=\sum_{j=1}^{N}
$$

3. Use the power sum formulas to compute $\sum_{j=1}^{10} 3 j^{2}+2 j-4$.
4. Compute $\lim _{N \rightarrow \infty} \sum_{j=1}^{N} \frac{5}{N}+\frac{6 j}{N^{2}}$.
5. Calculate $\lim _{N \rightarrow \infty} R_{N}$ for $f(x)=4 x-x^{2}$ on $[0,4]$.
