

## Homework Assignment for Chapter 05

1. Section 5.1: problem 22.

2. Section 5.2: problem 45.

Hint: 
$$\sum_{k=1}^n k^3 = \left( \frac{n(n+1)}{2} \right)^2$$

3. Section 5.3: Read Table 5.6.

4. Section 5.3: problems 5, 13, 17, 49, 71, 73.

5. Section 5.3: problem 87: Optional (it will not appear in any exam). Do it if time permits. It partially (but not completely) answers why continuous functions are integrable. The assumption on  $f$  here is stronger than continuity, therefore it is easier to prove that  $f$  is integrable on  $[a, b]$  under this assumption.

6. Section 5.4: problems 15, 16, 23, 25, 27, 33, 35, 39, 41, 43, 55, 77, 81, 84.

7. Section 5.5: problems 15, 16, 35, 41, 43, 53, 57, 58, 59, 61, 67, 69.

8. Section 5.6: problems 2, 33, 45, 112, 115, 117.

9. Chap 5, Additional and Advanced Exercises: problems 5, 8.