

Homework for Math 352  
Spring 2020

Hwk Set 13. Due Monday, April 20.

1. Compute  $\int_0^1 x^3 dx$  using the methods in Section 32.

2. In the proof of Lemma 32.2 (page 273) it was shown that  $L(f, P) \leq L(f, Q)$  when  $P \subset Q$ . It was stated that the proof that  $U(f, Q) \leq U(f, P)$  was similar. Write out the detail of this. (See also the lecture notes.)

3. [Bonus Question!]

A. Which of the following is a theorem in algebraic topology?

a. Furry nut theorem.   b. Woolly plum theorem.   c. Hairy ball theorem.

B. On which British game show did this question appear?

a. Anarchy in the U.K.   b. The Chase.   c. Harry and Megan's Not So Excellent Adventure.

C. Anarchy in the U.K. is obviously not a British game show. It is a song by which punk rock band?

a. The Buzzcocks.   b. The Sex Pistols.   c. The Dead Boys.