

Math 1210 6.4 and 6.5 Homework

<b>Date</b>	<b>Lecture Topic</b>	<b>Assignment Due</b>
Apr 16	6.4	6.2 Part II,6.3
Apr 17	6.5	
Apr 18	Help Session	
Apr 19	6.6	6.4,6.5
Apr 20	6.7	
Apr 23	6.8	6.6,6.7
Apr 24	Review	
Apr 25	Help Session	
Apr 26	Review	6.8
Apr 27	Review	Final Extra Credit Review Part I

Hw 6.4

Quick Check 1,2b

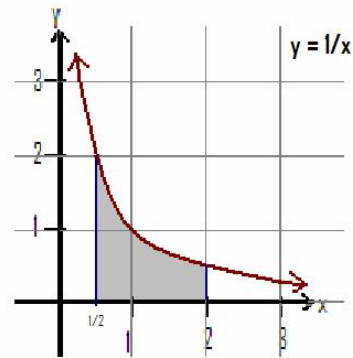
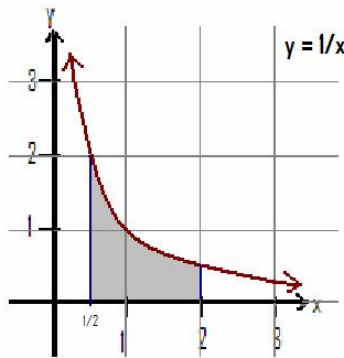
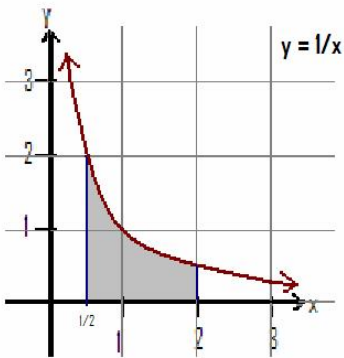
Exercises 1ac,2ace,4,7,10c,13-15,17,20,24,25,27ab,61,74

A. What's the difference between  $\sum_{j=1}^n a_j$  and  $\sum_{k=1}^n a_k$ ?

B. What's the difference between  $\sum_{j=1}^n j^2 - 1$  and  $\sum_{j=1}^n (j^2 - 1)$ ?

C. Find  $\sum_{k=1}^n \left[ \left( \frac{k-1}{n} \right)^2 + 2 \right]$

D. On the graphs below, draw left endpoint, right endpoint, and midpoint approximations of the area under the curve  $y = 1/x$  on the interval  $[1/2, 2]$  using three subintervals.



- Which is an overestimate?
- Which is an underestimate?
- Which is the best estimate?
- How could we improve the estimate?

E. Divide  $[0,4]$  into 5 subintervals.

- Give a formula for the left endpoints in terms of  $k$  with  $k$  starting at 1.
- Give a formula for the right endpoints in terms of  $k$  with  $k$  starting at 1.

F. Divide  $[0,4]$  into  $n$  subintervals.

- Give a formula for the left endpoints in terms of  $k$  with  $k$  starting at 1.
- Give a formula for the right endpoints in terms of  $k$  with  $k$  starting at 1.

G. Divide  $[a,b]$  into  $n$  subintervals.

- Give a formula for the left endpoints in terms of  $k$  with  $k$  starting at 1.
- Give a formula for the right endpoints in terms of  $k$  with  $k$  starting at 1.

Quick Check 3,4

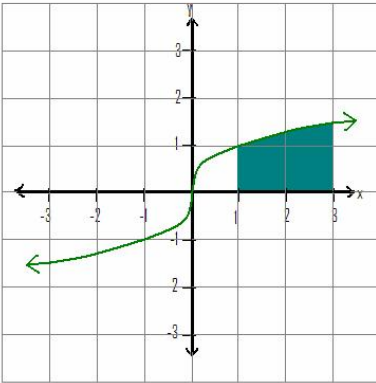
Exercises 33ac,46,55 (on 55 use right endpoints rather than midpoints), 59 (on 59 what do you notice?)

H. Can area be negative in calculus?

I. What's the area under the curve  $y = \sin \theta$  on the interval  $[0,2\pi]$ ? (This is not hard.)

Hw 6.5

- A. Set up the definite integral that gives the area of the shaded region. The function shown is  $y = \sqrt[3]{x}$ . You do not need to evaluate the definite integral.



Quick Check 3,4

Exercises 5,10a,14,16c,17,20,25

- B. What kind of object is  $\int_a^b f(x)dx$  ?
- C. What kind of object is  $\int f(x)dx$  ?
- D. What is  $\int_7^7 f(x)dx$  ?