

MATH 220: CALCULUS I  
WORKSHEET 18  
MARCH 28, 2013

1. Use the Midpoint Rule with  $n = 4$  to approximate  $\int_0^8 \sin \sqrt{x} \, dx$ .

2. Express the limit  $\lim_{n \rightarrow \infty} \sum_{i=1}^n \Delta x (3 - 4x_i)$  on the interval  $[1, 4]$  as a definite integral.

3. Evaluate the limit from the previous question.

4. If  $\int_1^8 f(x) \, dx = 13$  and  $\int_6^8 f(x) \, dx = -2$ , then what is  $\int_1^6 f(x) \, dx$ ?