

## Section 5.2 The Definite Integral (Part 1)

1. If the interval  $[2, 10]$  is divided into four equal subdivisions what is the length of each subdivision?
2. Write the right and left hand sums for the function  $f(x) = x^3 + 1$  on the interval  $[0, 8]$  where  $t_0 = 0$  and  $t_1 = 1$ .
3. Write out a Riemann sum for  $x^2 + x$  on the interval  $[0, 10]$ .
4. Write a definite integral that computes the area of the region bounded by  $f(x)$ , the  $x$ -axis,  $x = -1$ , and  $x = 4$ .
5. Use a Riemann sum for  $f(x) = x^3$  on  $[0, 10]$  to approximate the region bounded by  $f(x)$ , the  $x$ -axis,  $x = 0$ , and  $x = 10$ .
6. Using areas of regions compute  $\int_{-4}^5 -x \, dx$ .