

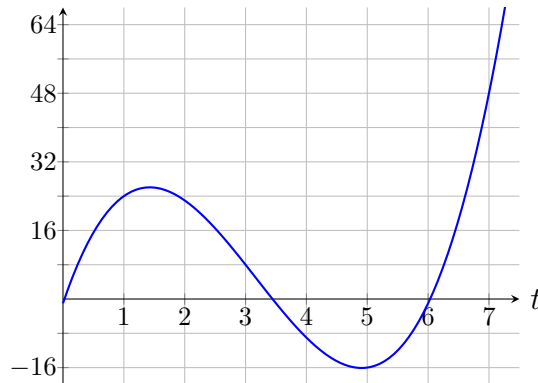
# INTRODUCTION TO CALCULUS

MATH 1A

UNIT 23: WORKSHEET

## Riemann Sums

**Problem 1:** The number of people in the math 4th floor common room changes over time, as people get in and out. Suppose  $f(t)$  gives the net change of people at time  $t$ . Are there more folks in the department at 7 PM than at 12 PM? To do so, look at the areas you see in the picture.



**Problem 2:** Now do a left Riemann sum with rectangles of width  $\Delta x = 1$  and give a rough estimate how many folks there are in the department at 7 PM. P.S. You sum up 5 rectangles from  $x_0 = a = 1$ ,  $x_1 = 2$ , to  $x_5 = 6$  because  $x_k = a + k(b - a)/6$  and  $a = 1$  and  $b = 7$ .

