

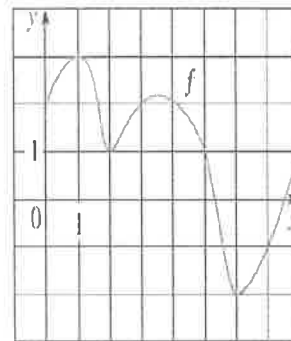
## Homework:

1. Evaluate the Riemann sum for  $f(x) = 2 - x^2$ ,  $0 \leq x \leq 2$ , with four subintervals, taking the sample points to be right endpoints. Explain, with the aid of a diagram, what the Riemann sum represents.
2. If  $f(x) = \ln x - 1$ ,  $1 \leq x \leq 4$ , evaluate the Riemann sum with  $n = 6$ , taking the sample points to be left endpoints. (Give your answer correct to six decimal places.) What does the Riemann sum represent? Illustrate with a diagram.
3. If  $f(x) = \sqrt{x} - 2$ ,  $1 \leq x \leq 6$ , find the Riemann sum with  $n = 5$  correct to six decimal places, taking the sample points to be midpoints. What does the Riemann sum represent? Illustrate with a diagram.
4. (a) Find the Riemann sum for  $f(x) = x - 2 \sin 2x$ ,  $0 \leq x \leq 3$ , with six terms, taking the sample points to be right end-

points. (Give your answer correct to six decimal places.) Explain what the Riemann sum represents with the aid of a sketch.

(b) Repeat part (a) with midpoints as the sample points.

5. The graph of a function  $f$  is given. Estimate  $\int_0^8 f(x) dx$  using four subintervals with (a) right endpoints, (b) left endpoints, and (c) midpoints.



21-25 III Use the form of the definition of the integral given in Equation 3 to evaluate the integral.

$$6. \int_0^2 (2 - x^2) dx$$

$$7. \int_0^5 (1 + 2x^3) dx$$