

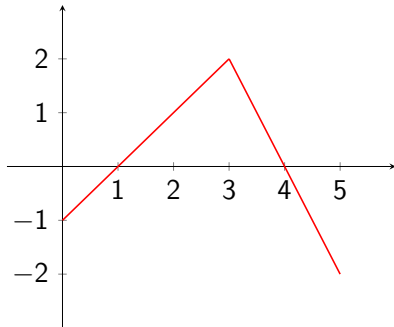
1. True or False?

$$\sum_{k=0}^4 (k^2 + (k+1)^2) = 25 + \sum_{k=1}^4 2k^2$$

2. The graph of a function  $f$  is depicted to the right. What is

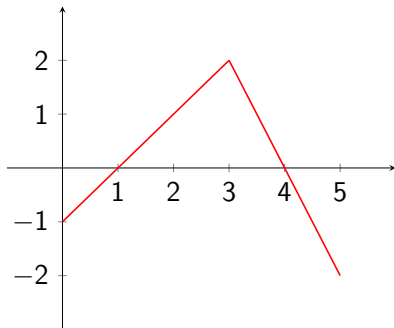
$$\int_0^5 f(x) dx?$$

- (A) 1
- (B)  $3/2$
- (C) 2
- (D) None of the above



3. The graph of a function  $f$  is depicted to the right. What is

$$\int_0^5 |f(x)| dx?$$



- (A)  $7/2$
- (B) 4
- (C)  $9/2$
- (D) None of the above

4. Approximate the area under the curve  $f(x) = x^2 - x + 2$  on the interval  $[0, 1]$  by writing down the left Riemann sum approximations  $L_2$ ,  $L_4$ , and  $L_6$ .

5. What is  $\int_{-2}^2 (2 - |x|) dx$ ?

(A) 2

(B) 4

(C) 8

(D) None of the above

6. True or False?

Suppose  $f$  is an odd function. Then it must be the case that

$$\int_{-3}^3 f(x) = 0.$$

6. True or False?

Suppose  $f$  is an odd function. Then it must be the case that

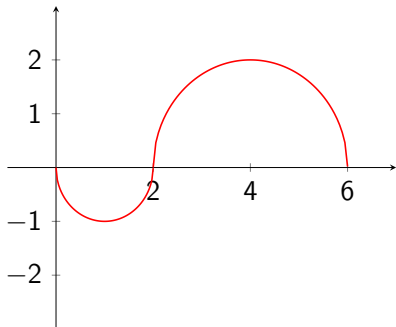
$$\int_{-3}^3 f(x) = 0.$$

**Follow-up.** What can be said if  $f$  is even?

7. The graph of a function  $f$  is depicted to the right. What is

$$\int_0^6 f(x) dx?$$

- (A)  $\pi/2$
- (B)  $3\pi/2$
- (C)  $5\pi/2$
- (D) None of the above



**Note.** The graph of  $f$  on  $[0, 2]$  is a semicircle, as is the graph on  $[2, 6]$ .



8. Suppose  $f$  is a function such that  $f'(x) > 0$  for all  $x$ , that  $f(0) = 0$ , that  $\int_{-1}^0 f(x) dx = -7$  and that  $\int_0^1 f(x) dx = 3$ . What can be said about the following definite integral?

$$\int_{-1}^1 |f(x)| dx$$

- (A) It equals  $-4$
- (B) It equals  $10$ .
- (C) It equals  $4$ .
- (D) None of the above.