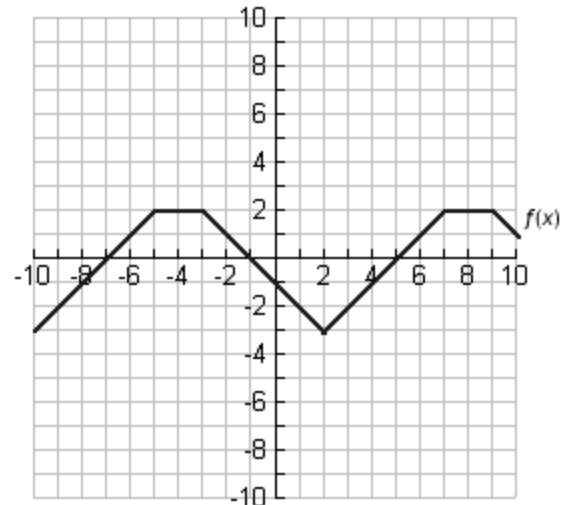


## Calculus, Investigation 5.3 #1

Consider the function  $f(x)$  shown in the graph to the right.



1. Find  $\int_{-10}^{-5} f(x)dx$ .

2. Find  $\int_{-10}^0 f(x)dx$ .

3. Find  $\int_{-1}^5 f(x)dx$ .

4. Find  $\int_{-10}^{10} f(x)dx$ .

5. If  $f(x)$  is periodic with period 12, then calculate  $\int_5^{65} f(x)dx$ .

6. If  $f(x)$  is periodic with period 12, then calculate  $\int_{100}^{108} f(x)dx$ .

7. Sketch the graph of  $y = 2f(x) + 6$ .

8. Find  $\int_{-7}^{-1} 2f(x) + 6dx$ . Compare your answer to  $\int_{-7}^{-1} f(x)dx$ .

9. Find  $\int_{-7}^5 2f(x) + 6dx$ . Compare your answer to  $\int_{-7}^5 f(x)dx$ .

10. If  $f(x)$  is periodic with period 12, then calculate  $\int_{2000}^{2008} 2f(x) + 6dx$ .

11. Find  $\int_{-10}^{-5} -3f(x)dx$

12. Find  $\int_{-10}^0 \frac{f(x)}{2}dx$

13. Find  $\int_{-1}^5 10f(x)dx$

14. Find  $\int_{-10}^{-5} 3 + f(x)dx$

15. Using the letters  $a$ ,  $b$ , and  $c$  etc. to represent some unknown constants, summarize your findings in this investigation.