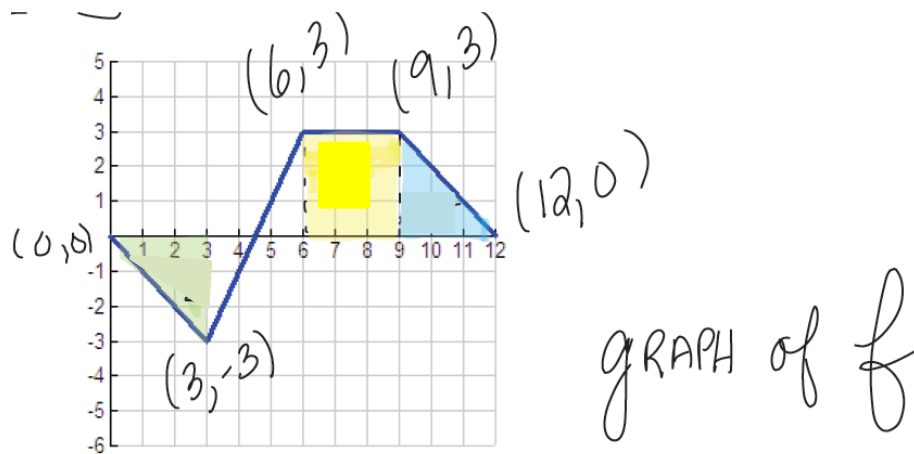


HW on Fundamental Theorems of Calculus

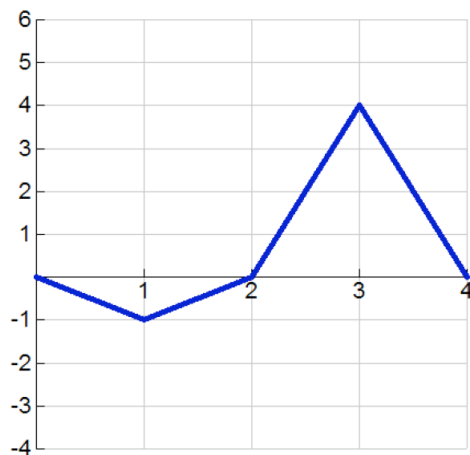


Refer to the diagram above and find the value of the following definite integrals:

1. $\int_6^9 f(x) dx$
2. $\int_0^3 f(x) dx$
3. $\int_6^{12} f(x) dx$
4. $\int_3^6 f(x) dx$

The purpose of the following problem is now that you know the Fundamental Theorems of Calculus, can you apply them to a given situation. The following is an AP type problem and may be referred to as an Accumulation Problem:

The Accumulation Function is given by: $g(x) = \int_0^x f(t) dt$ and the graph of f is :



1. Find the following: $g(0)$, $g(1)$, $g(2)$, $g(4)$.

2. Find $g'(1)$, $g'(3)$.

3. Find the equation of the tangent line to the graph of g at $x = 1$.

4. Find $g''(2.5)$.

5. What conclusion can be made about g at $x=2$?