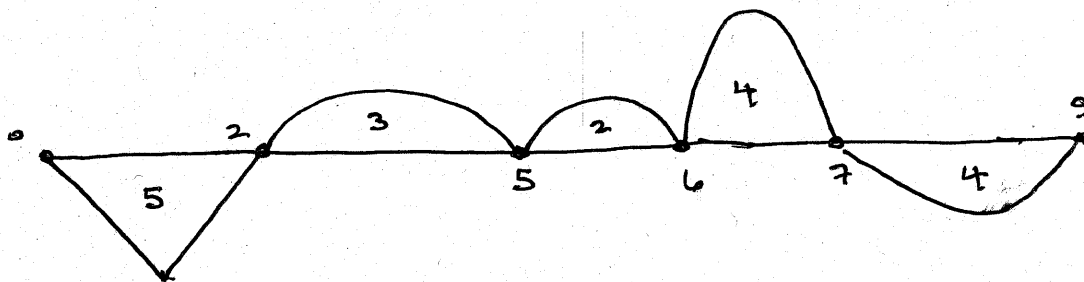


Section 5.1 Practice Problems: Area under a Curve

- Consider the area under the curve $f(x) = x^2 + 1$ on the interval $[0, 3]$.
 - Find the partition of $[0, 3]$ using $N = 6$ rectangles
 - Sketch the function and the rectangles together, using right endpoints for the rectangle heights
 - Use numerical sums with $N = 6$ to estimate the area under the curve
 - Use definite integral notation to write the area as an integral
- Consider the graph of $f(x)$ drawn below. Using the idea of net area, identify the values of the definite integrals listed below. Remember, the net area from $x = a$ to $x = b$ is $\int_a^b f(x) dx$.



- (a) $\int_0^2 f(x) dx$ (b) $\int_0^5 f(x) dx$
 (c) $\int_0^7 f(x) dx$ (d) $\int_2^9 f(x) dx$
 (e) $\int_6^7 f(x) dx$ (f) $\int_6^9 f(x) dx$