

Name: \_\_\_\_\_

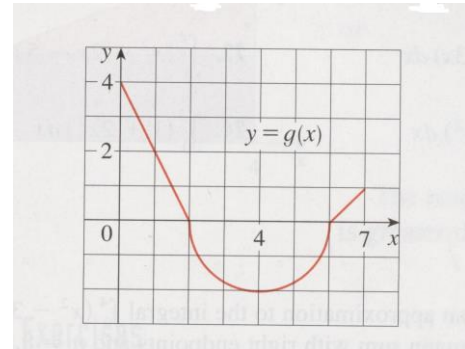
Calculus BC: Adventure – Section 5.3

1) The graph of  $g$  consists of two straight lines and a semicircle. Use it to evaluate each integral.

a)  $\int_0^2 g(x) dx =$

b)  $\int_2^6 g(x) dx =$

c)  $\int_0^7 g(x) dx =$



2) Consider the function  $f(x) = 3x^2 + 2x + 4$ . Find the average value of the function on the interval  $[1, 3]$ .  
Would the function ever take on this value? How do you know?

3) Evaluate the following integrals.

a)  $\int_1^8 \sqrt[3]{x} dx$

b)  $\int_0^2 x(2 + x^3) dx$

c)  $\int_{\pi}^{2\pi} \sec^2 x dx$

d)  $\int_1^2 \left( \sin^2 x + \cos^2 x + \frac{1}{\sqrt{x}} \right) dx$