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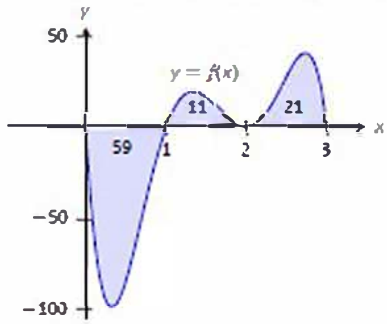
5.2, pg. 216 # 11
5.1, pg. 205 #16, 20, 26, 29

In Exercises 11 – 14, a graph of a function $f(x)$ is given; the numbers inside the shaded regions give the area of that region. Evaluate the definite integrals using this area information.

11.



(a) $\int_0^1 f(x)\,dx$

(b) $\int_0^2 f(x)\,dx$

(c) $\int_0^3 f(x)\,dx$

(d) $\int_1^2 -3f(x)\,dx$

In Exercises 9 – 27. evaluate the given indefinite integral.

16. $\int \frac{1}{\sqrt{x}}\,dx$

20. $\int 5e^{\theta}\,d\theta$

26. $\int e^{\pi}\,dx$

In Exercises 29 – 39, find $f(x)$ described by the given initial value problem.

29. $f'(x) = \sin x$ and $f(0) = 2$

T4m131.pb.set.fa22 Ɖ.gif 5.4, pg. 246 # 55, 56
5.3, pg. 234 # 6, 26

In Exercises 55 – 58, find $F'(x)$.

55. $F(x) = \int_2^{x^3+x} \frac{1}{t}\, dt$

56. $F(x) = \int_{x^3}^{0} t^3\, dt$

5.3, pg. 234 # 6, 26

In Exercises 5 – 12, write out each term of the summation and compute the sum.

6. $\sum_{i=-1}^{3} (4i - 2)$

Theorem 5.3.1 states

$$\sum_{i=1}^{n} a_i = \sum_{i=1}^{k} a_i + \sum_{i=k+1}^{n} a_i \text{, so}$$

$$\sum_{i=k+1}^{n} a_i = \sum_{i=1}^{n} a_i - \sum_{i=1}^{k} a_i .$$

Use this fact, along with other parts of Theorem 5.3.1, to evaluate the summations given in Exercises 25 – 28.

26. $\sum_{i=16}^{25} i^3$

5.4, pg. 246 # 6, 20, 22, 29, 42, 55, 56

In Exercises 5 – 28, evaluate the definite integral.

6. $\int_0^4 (x-1)^2 \, dx$

20. $\int_1^2 \frac{1}{x^3} \, dx$

22. $\int_0^1 x^2 \, dx$

29. Explain why:

(a) $\int_{-1}^{1} x^n \, dx = 0$, when n is a positive, odd integer

(b) $\int_{-1}^{1} x^n \, dx = 2\int_0^1 x^n \, dx$ when n is a positive, even integer.

In Exercises 41 – 46, a velocity function of an object moving along a straight line is given. Find the displacement of the object over the given time interval.

42. $v(t) = -32t + 200$ft/s on $[0, 10]$

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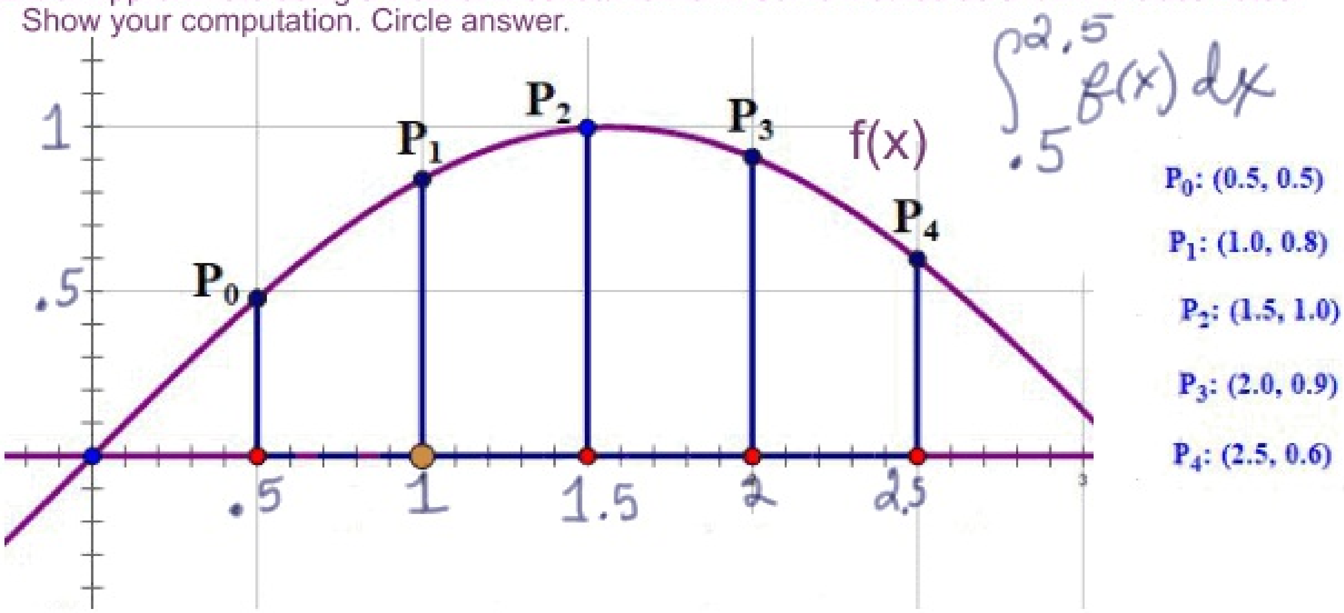
280 In Exercises 15 – 24, use Substitution to evaluate the indefinite integral

16. $\int \cos^3(x)\sin(x)dx$

Extra. Approximate using a Reimann boxes/Reimann Sums method as shown in class notes. Show your computation. Circle answer.



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7.1, pg 360 24. In Exercises 21 – 26, find the area of the enclosed region in two ways:

1. by treating the boundaries as functions of x, and
2. by treating the boundaries as functions of y.