

Corrective Assignment

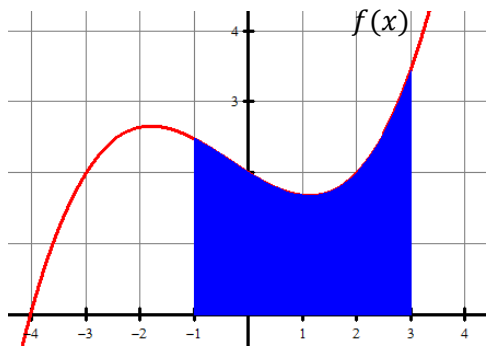


CALCULATOR ACTIVE

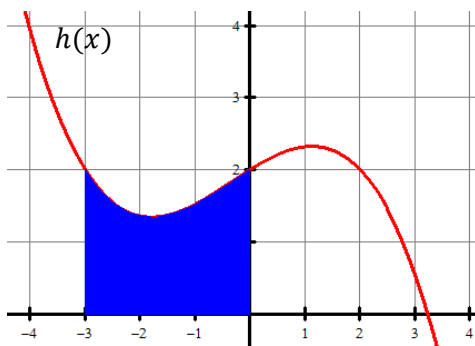


Write a definite integral to represent the area under of the curve.

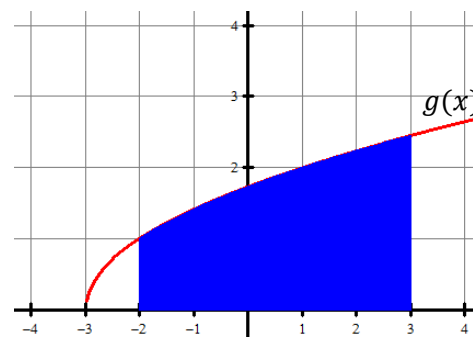
1.



2.



3.



Approximate the area under the curve using the given trapezoidal approximation.

4. $f(x) = \frac{1}{5}x^3 - x + 7$

 $n = 6$ subintervals on $[-1, 2]$

5. $f(x) = \frac{6}{x} + 5$

 $n = 3$ subintervals on $[1, 3]$

6. $f(x) = -0.2x^2 - x + 12$

 $n = 4$ subintervals on $[-1, 3]$

Use the calculator to find the exact value of the definite integral.

7.

$$\int_1^3 (x^3 - 2x^2 + 1) dx$$

8.

$$\int_{-2}^e (e^{x-1}) dx$$

9.

$$\int_{\pi}^{\frac{3\pi}{2}} (\cos^2 x) dx$$

10.

$$\int_1^e \left(\frac{4-x}{2x+1} \right) dx$$

Use the information provided to answer the following.

11. Let $v(t)$ represent the rate of change of a hot air balloon over time, where v is a differentiable function of t . The table shows the rate of change at selected times. The balloons height at $t = 0$ was 50 meters.

Time (minutes)	4	8	10	13	15
$v(t)$ (meters/min)	5.2	6.3	7.1	7.9	8.4

a. Use the data from the table and a trapezoidal approximation with four subintervals. Show the computations that lead to your answer.

b. What is the approximate height of the balloon at 15 minutes?

12. A particle moves along a horizontal line with a positive velocity $v(t)$, where v is a differentiable function of t . The time t is measured in seconds, and the velocity is measured in cm/sec. The velocity of the particle at selected times is given in the table below. The position of the particle at $t = 0$ is 22 cm.

Time (sec)	0	3	5	9	12
$v(t)$ (cm/sec)	21	18	15	23	27

a. Use data from the table to find an approximation for $v'(7)$. Show the computations that led to your answer. Indicate units of measure.

b. Use the data from the table and a trapezoidal approximation with four subintervals. Show the computations that lead to your answer.

c. What is the approximate position of the particle after 12 seconds?

ANSWERS TO CORRECTIVE ASSIGNMENT 7.2

1. $\int_{-1}^3 f(x)dx$	2. $\int_{-3}^0 h(x)dx$	3. $\int_{-2}^3 g(x)dx$	4. 20.287
5. 16.781	6. 42	7. $4.\bar{6}$	8. 5.525
9. 0.785	10. 0.858	11. a. 75.2 b. 125.2 meters	12. a. 2 cm/sec^2 b. 242.5 c. 264.5 cm