

Due date: _____

Name: _____

1. Evaluate the following sum.

$$\sum_{k=1}^{12} (2k^2 - k^3)$$

2. Evaluate the following sum.

$$\sum_{i=1}^{15} (i^3 - i^2 + 3i)$$

3. Evaluate the following integral using Riemann sums with right endpoints.

$$\int_0^3 2x \, dx$$

4. Evaluate the following integral using Riemann sums with right endpoints.

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

5. Evaluate the following integral using Riemann sums with right endpoints.

$$\int_0^2 (x - x^3) dx$$

6. Evaluate the following integral using Riemann sums with right endpoints.

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

7. Suppose that $\int_{-2}^3 f(x) dx = -15$. Evaluate the following integrals.

a) $\int_3^{-2} f(x) dx$

b) $\int_{-2}^3 5f(x) dx$

c) $\int_3^3 f(x) dx$

8. Suppose that $\int_{-1}^4 f(x) dx = -3$ and $\int_6^4 f(x) dx = 5$. Evaluate the following integrals.

a) $\int_4^6 f(x) dx$

b) $\int_{-1}^6 f(x) dx$

c) $\int_4^4 f(x) dx$

9. Suppose that $\int_{-3}^2 f(x) dx = -1$, $\int_2^5 f(x) dx = 3$, and $\int_5^2 h(x) dx = -3$. Evaluate the following integrals.

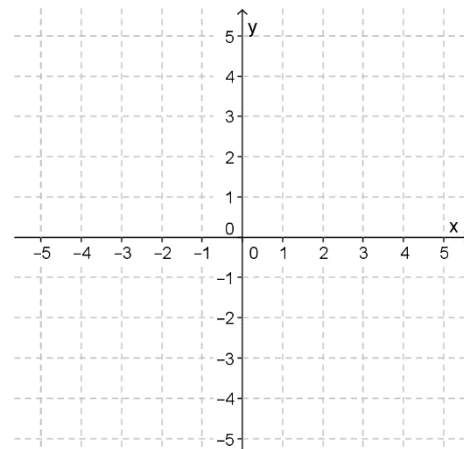
a) $\int_5^2 2f(x) dx$

b) $\int_2^5 (3f(x) + 2h(x)) dx$

c) $\int_{-3}^5 f(x) dx$

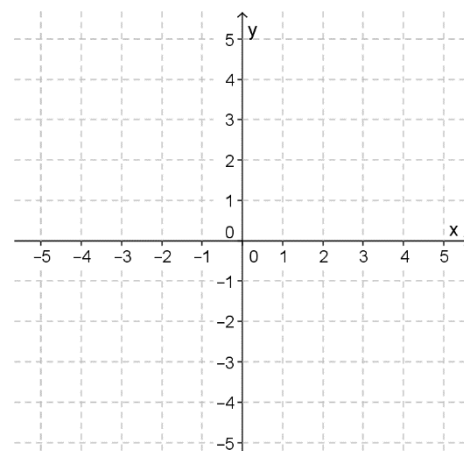
10. Graph the integrand and then evaluate the integral by interpreting it in terms of area.

$$\int_{-3}^1 (|x + 1| + 3) dx$$



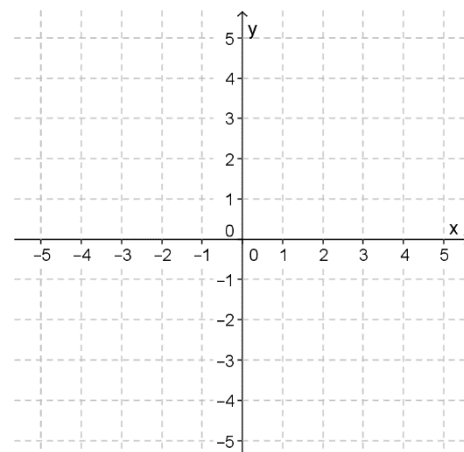
11. Graph the integrand and then evaluate the integral by interpreting it in terms of area.

$$\int_{-1}^3 (2 + |x - 1|) dx$$



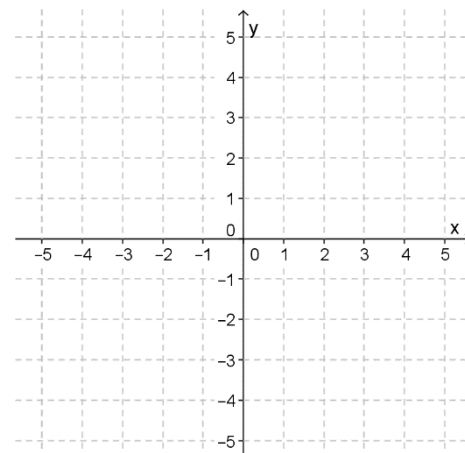
12. Graph the integrand and then evaluate the integral by interpreting it in terms of area.

$$\int_{-3}^0 (2 + \sqrt{9 - x^2}) dx$$



13. Graph the integrand and then evaluate the integral by interpreting it in terms of area.

$$\int_0^3 (4 - 2x) dx$$



14. Given the graph of $f(x)$, evaluate the following integrals.

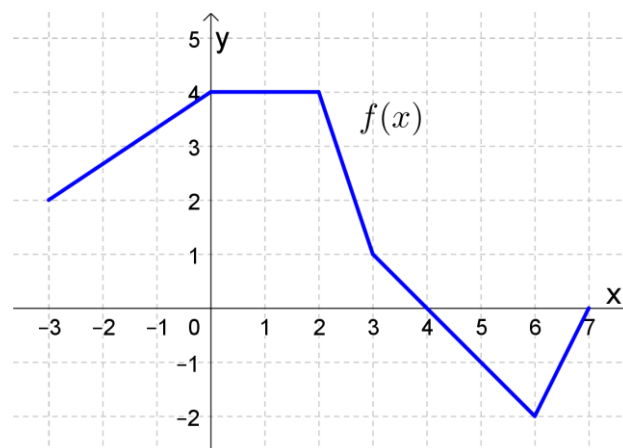
a) $\int_{-3}^0 f(x) dx$

b) $\int_0^3 f(x) dx$

c) $\int_2^4 f(x) dx$

d) $\int_3^6 f(x) dx$

e) $\int_5^7 f(x) dx$



Q: We see it once in a year, twice in a week, and never in a day. What is it?

Optional exercises from the Stewart textbook if you'd like more practice:

5.2 (p.388) #1, 21-25 odd (use right endpoints), 29, 33-43 odd, 47, 49