



## Problem Set 31: Definite Integrals

Solve the definite integrals.

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

2.  $\int_{-2}^2 (x^2 + 4x - 1) dx$

# AP Calculus AB – Unit 5

**Dan the Tutor**



Learn by Doing

---

3.  $\int_3^5 2 \, dx$

4.  $\int_{-1}^8 \sqrt[3]{x} \, dx$

# AP Calculus AB – Unit 5

**Dan the Tutor**



Learn by Doing

---

5.  $\int_1^4 |x - 2| dx$

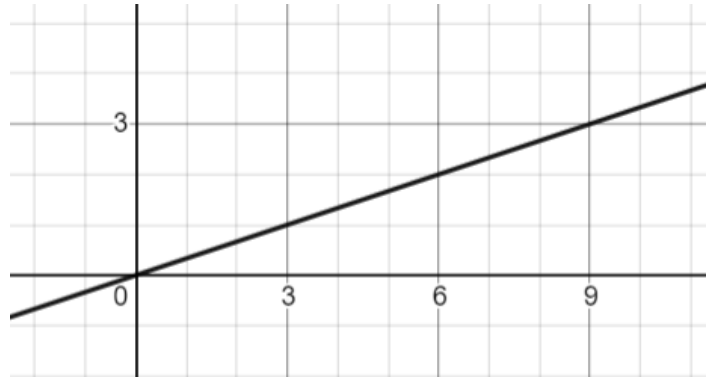
6.  $\int_{-2}^2 |x^2 - 1| dx$

# AP Calculus AB – Unit 5



Solve the definite integrals using the area of geometric shapes.

7.  $\int_0^9 \frac{1}{3}x \, dx$



8.  $\int_3^6 -4 \, dx$

# AP Calculus AB – Unit 5

**Dan the Tutor**



Learn by Doing

---

9.  $\int_2^7 (4x + 2) dx$

10.  $\int_{-1}^5 \left| -x + \frac{1}{2} \right| dx$

# AP Calculus AB – Unit 5

**Dan the Tutor**



Learn by Doing

---

11.  $\int_{-1}^1 -\sqrt{1-x^2} dx$

12.  $\int_0^3 \sqrt{-x^2+9} dx$