

## Practice Problems

Compute each of the following definite integrals.

1.  $\int_1^7 x^2 dx$

8.  $\int_0^{36} \frac{1}{2}\sqrt{x} dx$

2.  $\int_1^7 \frac{1}{x^2} dx$

9.  $\int_0^{10} e^{-x} dx$

3.  $\int_1^{10} \frac{1}{x} dx$

10.  $\int_0^2 e^{-3x} dx$

4.  $\int_{-\pi}^{\pi} \sin x dx$

11.  $\int_{-5}^5 \frac{1}{x} dx$

5.  $\int_0^{\pi/2} \cos x dx$

12.  $\int_0^{\ln 8} (e^x - e^{-x}) dx$

6.  $\int_1^3 2x - 5 dx$

13.  $2 \int_{-1}^1 \sqrt{1-x^2} dx$  (Hint: draw a picture!)

7.  $\int_{-10}^{10} x - x^3 + 6x^5 dx$

14.  $\int_{10}^N \frac{1}{x^2} dx$

## Practice Problems - Answers

$$1) 114 \quad 2) \frac{6}{7} \quad 3) \ln 10 \quad 4) 0 \quad 5) 1 \quad 6) -2 \quad 7) 0 \quad 8) 72 \quad 9) 1 - e^{-10}$$

$$10) \frac{1}{3} - \frac{1}{3}e^{-6} \cong 0.3325071 \quad 11) \text{undefined} \quad 12) \frac{49}{8} \quad 13) \pi \quad 14) \frac{1}{10} - \frac{1}{N}$$