

Section 5.3 Practice Problems: Definite Integrals

1.  $I = \int_2^4 \frac{1}{x} + \frac{1}{x^2} dx$
2.  $I = \int_0^1 x^{3/7} - x^{-2/11} dx$
3.  $I = \int_{-2}^1 x^3 + x^2 - 3 dx$
4.  $I = \int_1^9 \frac{1}{x^{3/2}} dx$
5.  $I = \int_6^2 e^x dx$
6.  $I = \int_{-10}^{-3} \frac{1}{x} dx$
7.  $I = \int_{\pi}^{2\pi} 4 \cos x dx$
8.  $I = \int_{\pi}^{2\pi} 5 \sin x dx$
9.  $I = \int_0^{\pi} \sin x dx$
10.  $I = \int_0^1 \sec x \tan x dx$
11.  $I = \int_{\pi/2}^2 \csc^2 x dx$
12.  $I = \int_1^3 \frac{1}{1+x^2} dx$
13. Find the derivative of  $g(x) = \int_6^{2x-1} \frac{t}{t^2+1} dt$
14. Find the derivative of  $g(x) = \int_{x^3}^5 t^4 + t^2 + 1 dt$
15. Find the derivative of  $g(x) = \int_{-3}^{4x+1} \frac{t^2}{\sin t + 3t} dt$
16. Find the derivative of  $g(x) = \int_0^{e^{2x}} e^t + \ln t dt$
17. Find the derivative of  $g(x) = \int_{\cos x}^{\ln x} \frac{1}{\sqrt{t^2+1}} dt$
18. Find the derivative of  $g(x) = \int_{2x}^{5x} e^t dt$