

6.14 Selecting Techniques for Antidifferentiation

Calculus

Name: _____

CA #1

Find the indefinite integral.

1. $\int \frac{1}{(x+1)(1-2x)} dx$

2. $\int \frac{6x^2-63x+74}{x-9} dx$

3. $\int \frac{\sec^2 x}{\sqrt{\tan x}} dx$

4. $\int x \cos x dx$

5. $\int_2^{\infty} \frac{1}{x\sqrt{x^2-4}} dx$

6. $\int \frac{1}{x^2-4x+5} dx$

7. $\int \frac{1}{\sqrt{1-x^2}} dx$

8. $\int \frac{e^x}{4-e^x} dx$

Evaluate the definite integral.

9. $\int_0^4 (4x + 5) dx$

10. $\int_0^1 \frac{x}{(x^2+1)^3} dx$

11. $\int_{-\pi}^{-\frac{\pi}{2}} (1 - \cos x) dx$

12. $\int_0^1 e^{-2x} dx$

13. $\int_{-\frac{1}{3}}^{\frac{1}{3}} \frac{1}{1+9t^2} dt$

Answers to 6.14 CA #1

1. $\frac{1}{3} \ln \left \frac{x+1}{1-2x} \right + C$	2. $3x^2 - 9x - 7 \ln x - 9 + C$	3. $2\sqrt{\tan x} + C$
4. $x \sin x + \cos x + C$	5. $\frac{\pi}{4}$	6. $\tan^{-1}(x - 2) + C$
7. $\sin^{-1}(x) + C$	8. $-\ln 4 - e^x + C$	9. 52
10. $\frac{3}{16}$	11. $\frac{\pi}{2} + 1$	12. $\frac{1}{2} - \frac{1}{2e^2}$
13. $\frac{\pi}{6}$		