

6.14 Selecting Techniques for Antidifferentiation

Calculus

Name: _____

CA #2

Find the indefinite integral.

1. $\int \frac{1}{\sqrt{-x^2-6x-8}} dx$

2. $\int \sqrt{x}(x - \sqrt[4]{x}) dx$

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

4. $\int_0^{\infty} e^{-x} dx$

5. $\int \frac{1}{25x^2+1} dx$

6. $\int 3^x dx$

7. $\int \cos x \sqrt{\sin x} dx$

8. $\int \frac{90x^2-28x+3}{10x-2} dx$

Evaluate the definite integral.

9. $\int_{\frac{\pi}{2}}^{2\pi} \sin(x) e^{\cos(x)} dx$

10. $\int_0^4 (2x + 4) dx$

11. $\int_0^{\frac{\pi}{6}} (\sin(3x) - 3x) dx$

12. $\int x^2 \sin(x) dx$

Answers to 6.14 CA #2

1. $\sin^{-1}(x + 3) + C$		2. $\frac{2}{5}x^{\frac{5}{2}} - \frac{4}{7}x^{\frac{7}{4}} + C$		3. $\ln \left \frac{x-2}{x} \right + C$	
4. 1	5. $\frac{1}{5} \tan^{-1}(5x) + C$	6. $\frac{1}{\ln 3} 3^x + C$	7. $\frac{2}{3} (\sin x)^{\frac{3}{2}} + C$		8. $\frac{9}{2}x^2 - x + \frac{1}{10} \ln 10x - 2 + C$
9. $1 - e$		10. 32	11. $\frac{1}{3} - \frac{\pi^2}{24}$		12. $-x^2 \cos x + 2x \sin x + 2 \cos x + C$