

Homework 4, Due Wednesday March 25

Evaluate the integrals

1. $\int \frac{\ln t \sin(\ln t)}{t} dt$ (first substitution then integration by parts)

2. $\int \sin(3t) \cos(4t) dt$

3. $\int_0^{\pi/2} \sin(t) \sin(2t) dt$

4. $\int \frac{\sqrt{x^2 - 4}}{x^3} dx$ (trigonometric substitution)

5. $\int_0^1 \frac{\sqrt{1+x^2}}{x} dx$ (trigonometric substitution)

6. $\int \frac{1}{\sqrt{1-x^2}} dx$ (trigonometric substitution)

For problems 7 - 13 use partial fractions technique

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

8. $\int \frac{x-1}{x^2+3x+2} dx$

9. $\int_3^6 \frac{x}{x^2-4} dx$

10. $\int \frac{x^2+1}{x^2-1} dx$

11. $\int \frac{x+1}{x^2+9} dx$

12. $\int_9^{16} \frac{\sqrt{x}}{x-4} dx$ (first make a substitution)

13. $\int \frac{dx}{\sqrt{x+3}-4}$ (first make a substitution)

Section 7.8 Problems 5, 9, 11, 14, 24, 28, 31, 32, 50, 52, 57