

Test Form D

Name _____ Date _____

Chapter 8

Class _____ Section _____

1. Evaluate the integral: $\int \frac{1 + \cos x}{\sin x} dx$.

2. Evaluate the integral: $\int \frac{1}{\csc x - 1} dx$.

3. Evaluate the integral: $\int x \ln x dx$.

4. Evaluate the integral: $\int \frac{2x^2 + 4x + 22}{x^2 + 2x + 10} dx$.

5. Evaluate the integral: $\int \sin^5 t dt$.

6. Evaluate the integral: $\int \sec^3 \frac{x}{2} \tan^3 \frac{x}{2} dx$.

7. Evaluate the integral: $\int \frac{1}{\sqrt{x^2 - 4}} dx$.

8. Evaluate the definite integral: $\int_{1/2}^1 \frac{\sqrt{1-x^2}}{x} dx$.

9. Evaluate the integral: $\int \frac{20x^2 + x + 45}{x(4x^2 + 9)} dx$.

10. Find the limit: $\lim_{x \rightarrow 0} \frac{\sin 2x}{x^2}$.

11. Find the limit: $\lim_{x \rightarrow 0} \left(\frac{1}{x}\right)^x$.

12. Evaluate the integral or show that it diverges: $\int_0^\pi \tan x dx$.

1. $\ln|1 - \cos x| + C$ 2. $\sec x + \tan x - x + C$
 3. $\frac{7}{12}x^2[2 \ln x - 1] + C$
 4. $2x + \frac{3}{2} \arctan \frac{x}{1} + C$
 5. $-t + \frac{3}{2} \cos^3 t - \frac{3}{1} \cos^5 t + C$
 6. $2 \left[\frac{5}{1} \sec^5 \frac{x}{2} - \frac{3}{1} \sec^3 \frac{x}{2} \right] + C$
 7. $\ln|x + \sqrt{x^2 - 4}| + C$ 8. $\ln(2 + \sqrt{3}) - \frac{2}{\sqrt{3}}$
 9. $5 \ln|x| + \frac{6}{1} \arctan \frac{x}{2} + C$ 10. ∞
 11. 1 12. The integral diverges.