PRACTICE PROBLEM SET 20

Now evaluate the following integrals. The answers are in Chapter 21.

1. $\int \frac{1}{x^4}dx$

2. $\int \frac{5}{\sqrt{x}}dx$ $5\int x^{-1/2}dx$ $5(2x^{1/2})+c$ $10\sqrt{x}+c$

3. $\int \frac{x^5+7}{x^2}dx$

4. $\int (5x^4-3x^2+2x+6)dx$ $x^5-x^3+x^2+6x+c$

5. $\int (3x^{-3}-2x^{-2}+x^4+16x^7)dx$

6. $\int (1+x^2)(x-2)dx$ $\int x-2+x^3-2x^2\,dx$ $\frac{1}{2}x^2-2x+\frac{1}{4}x^4-\frac{2}{3}x^3+c$

7. $\int x^{\frac{1}{3}}(2+x)dx$

8. $\int (x^3+x)^2dx$ $\int x^6+2x^4+x^2\,dx=\frac{1}{7}x^7+\frac{2}{5}x^5+\frac{1}{3}x^3+c$

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

10. $\int x(x-1)^3dx$ $\int x^4-3x^3+3x^2-x\,dx=\frac{1}{5}x^5-\frac{3}{4}x^4+x^3-\frac{1}{2}x^2+c$

11. $\int (\cos x-5\sin x)dx$

12. $\int \sec x(\sec x+\tan x)dx$ $\int \sec^2x+\sec x\tan x\,dx=\tan x+\sec x+c$

13. $\int (\sec^2 x+x)dx$

14. $\int \frac{\sin x}{\cos^2 x}dx$ $\int \tan x\sec x\,dx=\sec x+c$

15. $\int \frac{\cos^3 x+4}{\cos^2 x}dx$

16. $\int \frac{\sin 2x}{\cos x}dx$ $\int \frac{2\sin x\cos x}{\cos x}dx=-2\cos x+c$

17. $\int (1+\cos^2 x\sec x)dx$

18. $\int (\tan^2 x)dx$ $\int \sec^2x-1\,dx=\tan x-x+c$

19. $\int \frac{1}{\csc x}dx$

20. $\int \left(x-\frac{2}{\cos^2 x}\right)dx$ $\int x-2\int \sec^2x\,dx$ $\frac{1}{2}x^2-2\tan x+c$