Integrals Worksheet 1

Compute the following antiderivatives. (Please do your work on a separate sheet of paper.)

1. Find the antiderivative of $f(x) = 4x^3 + 5\sqrt{x} + \dfrac{1}{x^2}$
2. Find the antiderivative of $f(x) = x^8 + x^3 + x^2 + \sqrt{x} + \dfrac{1}{x^5}$
3. Find the antiderivative of $f(x) = \dfrac{1}{x^2} + \dfrac{1}{x^3} + \dfrac{1}{\sqrt{x}} + \dfrac{1}{x}$
4. $\displaystyle\int x^4 + 5x + 2 \; dx$
5. $\displaystyle\int 3x^4 + 5x^2 + 2x^{-2} \; dx$
6. $\displaystyle\int (x^3 + 5x - 7)x \; dx$
7. $\displaystyle\int x^4 + 5x + 2 \; dx$
8. $\displaystyle\int \sqrt{x} - \sqrt{x^3} + \frac{5}{x^3} + \pi \; dx$
9. $\displaystyle\int \sqrt[3]{x} - \frac{1}{\sqrt{x^3}} + \frac{\sqrt{2}}{x^3} + e \; dx$
10. $\displaystyle\int (\frac{4}{\sqrt{x}} + \frac{4}{x}) \; dx$
11. $\displaystyle\int \sin x - 8\cos 8 \; dx$
12. $\displaystyle\int \sec x \tan x + \sec^2 x \; dx$

Integrals Worksheet 2

Compute the following indefinite and definite integrals. (Please do your work on a separate sheet of paper.)

13. $\int \; dx$

14. $\int_2^{10} 5 \; dx$

15. $\int e \; dx$

16. $\int_0^{\pi/4} \sec^2 x \; dx$

17. $\int (\sec^2 x + \sec x \tan x) \;\; dx$

18. $\int_0^{\pi/4} \sec x(\tan x + \sec x) \; dx$

19. $\int_{\pi/6}^{\pi/3} \csc^2 x - 5 \csc x cot x \; dx$

20. $\int_0^1 e^x + e + 3^x + 10^x \; dx$

21. $\int (5x^4 + 3\cos x + 2e^x) \;\; dx$

22. $\int (5^x + \dfrac{1}{1+x^2}) \;\; dx$

23. Find the antiderivative of $f(x) = x^6 + \dfrac{1}{x^2} + 5 + 12e^x$.