Worksheet 4

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(1-8) Determine the following integrals by making an appropriate substitution

1. $\int (x^2 + 2x + 3)^6 (x+1)dx.$

2. $\int x\sqrt{4 - x^2}dx.$

3. $\int \dfrac{8x}{e^{x^2}}dx.$

4. $\int \dfrac{1}{x\ln(x^2)}dx.$

5. $\int \dfrac{dx}{1 + e^x}.$

6. $\int \dfrac{\cos(\sqrt{x})}{\sqrt{x}}dx.$

7. $\int \dfrac{\cos(x)}{(2 + \sin(x))^3}dx.$

8. $\int \dfrac{\sin(x) + \cos(x)}{\sin(x) - \cos(x)}dx.$

(9-13) Evaluate the integrals

9. $\int x(x+7)^4 dx.$

10. $\int x^2 e^x dx.$

11. $\int \dfrac{(\ln(x))^5}{x}dx.$

12. $\int \dfrac{\ln(x)}{x^5}dx.$

13. $\int (x^{3/2} + \ln(2x))dx.$