Practice for Exam 1

Evaluate the following integrals. Show all work.

1. $\int \sin(t)e^{3t}\,dt$

2. $\int \frac{t^2}{7+t^2}\,dt$

3. $\int \sqrt{-x^2-8x-14}\,dx$

4. $\int \frac{x}{\sqrt{x^2+4x+7}}\,dx$

5. $\int \frac{1}{\sqrt{4x-(2x)^2}}\,dx$

6. $\int \frac{1}{\cos y}\,dy$

7. $\int \frac{4}{t^2-6t+8}\,dt$

8. $\int \frac{2}{u(u^2+1)}\,du$

9. $\int \frac{x^2+2}{(x-1)^2(x-2)}\,dx$

10. $\int \frac{x}{\sqrt{x+1}}\,dx$

11. $\int_0^{\pi^{1/3}} x^2 \frac{\sin(x^3)}{\cos(x^3)}\,dx$

12. $\int \frac{x^3+2x^2+1}{x^2+2x}\,dx$

Evaluate the integrals in problems 13, 14 by using a table:

13. $\int \cos^3 y \sin^2 y\,dy$

14. $\int \frac{1}{\sqrt{-2x^2+3}}\,dx$

15 Consider the integral $\int_0^{\frac{\pi}{2}} \sin x \, dx$. Calculate

(a) TRAP(2)

(b) MID(2)

(c) SIMP(2)