MA 2310: Introduction to the u-substitution

Compute

1. $\int \sin(5x)\,dx$
2. $\int e^{3x-7}\,dx$
3. $\int \sec^2(7x)\,dx$
4. $\int \sec(\frac{1}{2}x)\tan(\frac{1}{2}x)\,dx$
5. $\int 2x\sin(x^2+1)\,dx$
6. $\int xe^{x^2+1}\,dx$
7. $\int x^2e^{x^3+1}\,dx$
8. $\int x^4e^{x^5+1}\,dx$
9. $\int \frac{e^{\sqrt{x}+1}}{\sqrt{x}}\,dx$
10. $\int \frac{x}{x^2+1}\,dx$
11. $\int \frac{1}{x^2+1}\,dx$
12. $\int \frac{x^2}{x^3+1}\,dx$
13. $\int \frac{e^{2x}}{e^{2x}+1}\,dx$
14. $\int \sin(5x)\,dx$
15. $\int \sin^2(x)\cos(x)\,dx$