Evaluate the following integrals.

1. $\displaystyle\int_1^{e^3} \ln(2x)\, dx$

2. $\displaystyle\int \frac{e^x}{1 + e^{2x}}\, dx$

3. $\displaystyle\int \cos(x)\sin(x)e^{\sin(x)}\, dx$

4. $\displaystyle\int x^3 \cos(x^4)\, dx$

5. $\displaystyle\int x^3 \sin(x^2)\, dx$

6. $\displaystyle\int \arctan(x)\, dx$

7. $\displaystyle\int_2^3 \frac{x^2 - 1}{x^3 - 3x}\, dx$

8. $\displaystyle\int_0^{\pi} e^x \sin(e^x)\, dx$

Evaluate the following integrals.

9. $\displaystyle\int_{1}^{5} x\sqrt{28 - x^2}\ dx$

13. $\displaystyle\int \frac{x}{x+1}\ dx$

10. $\displaystyle\int \frac{e^x}{1 + e^x}\ dx$

14. $\displaystyle\int \frac{\sec(x)^2}{\sqrt{1 - \tan(x)^2}}\ dx$

11. $\displaystyle\int x^5 e^{x^3}\ dx$

15. $\displaystyle\int \sin(x)^2\ dx$

12. $\displaystyle\int \frac{3}{x^2 + 6x + 10}\ dx$

16. $\displaystyle\int_{0}^{\pi} e^x \sin(x)\ dx$