Calculus

Name: Date:

7A Exercises

Extrema on an Interval

In Exercises 1–6, identify u and dv for finding the integral using integration by parts. (Do not evaluate the integral.)

1. $\int xe^{2x}\,dx$

5. $\int x\sec^2 x\,dx$

In Exercises 7–10, evaluate the integral using integration by parts with the given choices of u and dv.

7. $\int x^3 \ln x\,dx;\ u = \ln x,\ dv = x^3\,dx$

8. $\int (4x + 7)e^x\,dx;\ u = 4x + 7,\ dv = e^x\,dx$

Evaluate the integrals using Integration by Parts

13. $\int x^3e^x\,dx$

17. $\int t\ln(t + 1)\,dt$

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

33. $\int \arctan x\,dx$

37. $\int e^{-x}\cos 2x\,dx$

In Exercises 49–60, evaluate the definite integral. Use a graphing utility to confirm your result.

49. $\int_0^3 xe^{x/2}\,dx$