

No calculators will be allowed and no partial credit will be given.

1. Express the indefinite integral $\int 2x^6 \ln(x) dx$ in terms of elementary functions. Use the symbol C to denote an arbitrary constant.
2. Express in simplified form the value of $\int_1^e \frac{4 \ln(x)}{x} dx$.
3. Express the indefinite integral $\int 2x e^{3x} dx$ in terms of elementary functions. Use the symbol C to denote an arbitrary constant.
4. Express in simplified form the value of $\int_0^1 3x e^{4x} dx$.
5. Express the indefinite integral $\int -\ln(7t) dt$ in terms of elementary functions. Use the symbol C to denote an arbitrary constant.
6. Express the indefinite integral $\int \frac{\ln(x)}{x^{\frac{2}{3}}} dx$ in terms of elementary functions. Use the symbol C to denote an arbitrary constant.
7. Express the indefinite integral $\int -4x^2 e^x dx$ in terms of elementary functions. Use the symbol C to denote an arbitrary constant.
8. Express in simplified form the value of $\int_0^1 4x^2 e^{2x} dx$.
9. Express in simplified form the value of $\int_1^e x^{\frac{3}{2}} \ln(x) dx$.

1. $2 \left(\frac{x^7 \ln(x)}{7} - \frac{x^7}{49} \right) + C$

2. 2

3. $\frac{2x e^{3x}}{3} - \frac{2e^{3x}}{9} + C$

4. $\frac{9 \cdot e^4}{16} + \frac{3}{16}$

5. $t - t \ln(7t) + C$

6. $3x^{\frac{1}{3}} \ln(x) - 9x^{\frac{1}{3}} + C$

7. $-4x^2 e^x + 8x e^x - 8e^x + C$

8. $e^2 - 1$

9. $\frac{6 \cdot e^{\frac{5}{2}}}{25} + \frac{4}{25}$