

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

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

1. $\frac{5 (\ln(x))^2}{2} + C$

2. $\frac{10 \cdot e^3}{9} + \frac{5}{9}$

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

4. $\frac{1}{8} - \frac{9 \cdot e^{-8}}{8}$

5. $2t \ln(2t) - 2t + C$

6. $\frac{3x^{\frac{7}{3}} \ln(x)}{7} - \frac{9x^{\frac{7}{3}}}{49} + C$

7. $-\frac{3x^2 e^{-2x}}{2} - \frac{3x e^{-2x}}{2} - \frac{3e^{-2x}}{4} + C$

8. $\frac{25 \cdot e^8}{16} - \frac{1}{16}$

9. $\frac{25}{16} - \frac{5 \cdot e^{\frac{4}{5}}}{16}$