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

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1. Express the indefinite integral $\int 2 \ln(x)\, dx$ in terms of elementary functions. Use the symbol C to denote an arbitrary constant.

2. Express in simplified form the value of $\int_1^e 2\, x^4 \ln(x)\, dx$.

3. Express the indefinite integral $\int 2\, x\, e^{2\,x}\, dx$ in terms of elementary functions. Use the symbol C to denote an arbitrary constant.

4. Express in simplified form the value of $\int_0^1 2\, x\, e^{-4\,x}\, dx$.

5. Express the indefinite integral $\int -3 \ln(2\,t)\, dt$ in terms of elementary functions. Use the symbol C to denote an arbitrary constant.

6. Express the indefinite integral $\int x^{\frac{3}{2}} \ln(x)\, dx$ in terms of elementary functions. Use the symbol C to denote an arbitrary constant.

7. Express the indefinite integral $\int -2\, x^2\, e^{2\,x}\, dx$ in terms of elementary functions. Use the symbol C to denote an arbitrary constant.

8. Express in simplified form the value of $\int_0^1 4\, x^2\, e^{-3\,x}\, dx$.

9. Express in simplified form the value of $\int_1^e \frac{\ln(x)}{x^{\frac{3}{2}}}\, dx$.

1. $2\left(x \ln\left(x\right) - x\right) + C$

2. $\dfrac{8 \cdot e^5}{25} + \dfrac{2}{25}$

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

4. $\dfrac{1}{8} - \dfrac{5 \cdot e^{-4}}{8}$

5. $3\,t - 3\,t \ln\left(2\,t\right) + C$

6. $\dfrac{2\,x^{\frac{5}{2}} \ln\left(x\right)}{5} - \dfrac{4\,x^{\frac{5}{2}}}{25} + C$

7. $-x^2\, e^{2\,x} + x\, e^{2\,x} - \dfrac{e^{2\,x}}{2} + C$

8. $\dfrac{8}{27} - \dfrac{68 \cdot e^{-3}}{27}$

9. $4 - \dfrac{6}{\sqrt{e}}$