

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

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

1. $\frac{(x^2 - 4x + 2)^6}{6} + C$

2. $\frac{\sin(6x)}{2} + C$

3. $-\frac{3(\cos(t))^8}{8} + C$

4. $-\frac{5e^{-t^4}}{4} + C$

5. $\frac{8e^{x^{\frac{7}{4}+1}}}{7} + C$

6. $\ln(|3x^2 + 5x + 3|) + C$

7. -30

8. $1 - e^{-1}$

9. $\frac{3}{5}$

10. 12