

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

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

1. $-\frac{4 (\cos(x))^7}{7} + \frac{8 (\cos(x))^5}{5} - \frac{4 (\cos(x))^3}{3} + C$

2. $\frac{(\sin(x))^{10}}{5} - \frac{(\sin(x))^8}{2} + \frac{(\sin(x))^6}{3} + C$

3. $\frac{1}{3}$

4. -1

5. $2 (\sin(t))^{\frac{3}{2}} + C$

6. $\frac{10 (\cos(x))^{\frac{7}{2}}}{7} - \frac{10 (\cos(x))^{\frac{3}{2}}}{3} + C$

7. $-\frac{4}{3}$

8. $\frac{40}{21}$

9. $2t - \sin(2t) + C$