

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

---

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

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

2.  $(\sin(x))^3 + C$

3. 1

4.  $-\frac{8}{35}$

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

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

7.  $-\frac{1}{6}$

8.  $\frac{4}{21}$

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