

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

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

1. $-(\cos(x))^4 + C$

2. $\frac{4(\sin(x))^5}{5} - \frac{4(\sin(x))^7}{7} + C$

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

4. $-\frac{5}{3}$

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

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

7. -2

8. $2 - \frac{2}{2^{\frac{3}{4}}}$

9. $\frac{5 \sin(2t)}{4} + \frac{5t}{2} + C$