

Bonus Quiz 1

This quiz is graded out of 12 marks. No books, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

Question 1. (1 mark each)

a.

$$\int \cos x \, dx = \sin x + C$$

b.

$$\int \sin x \, dx = -\cos x + C$$

c.

$$\int \sec^2 x \, dx = \tan x + C$$

d.

$$\int \sec x \tan x \, dx = \sec x + C$$

e.

$$\int \csc^2 x \, dx = -\cot x + C$$

f.

$$\int \csc x \cot x \, dx = -\csc x + C$$

g.

$$\int \sec x \, dx = \ln |\sec x + \tan x| + C$$

h.

$$\int \csc x \, dx = -\ln |\csc x + \cot x| + C$$

i.

$$\int \tan x \, dx = -\ln |\cos x| + C$$

j.

$$\int \cot x \, dx = \ln |\sin x| + C$$

k.

$$\int x^n \, dx \text{ where } n \neq -1. = \frac{x^{n+1}}{n+1} + C$$

l.

$$\begin{aligned} \int \frac{t^{3/2} + t^{1/2}}{t} \, dt &= \int \frac{t^{3/2}}{t} + \frac{t^{1/2}}{t} \, dt = \int t^{1/2} + t^{-1/2} \, dt \\ &= \frac{2t^{3/2}}{3} + 2t^{1/2} + C \end{aligned}$$