

Quiz 2

This quiz is graded out of 10 marks. No books, calculators, 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) Integrate the following indefinite integrals:

a.

$$\int \frac{1}{x^{3/5}} dx = \int x^{-3/5} dx = \frac{5x^{-2/5}}{2} + C$$

b.

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

c.

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

d.

$$\int \frac{1}{\sqrt{5-x^2}} dx = \arcsin\left(\frac{x}{\sqrt{5}}\right) + C$$

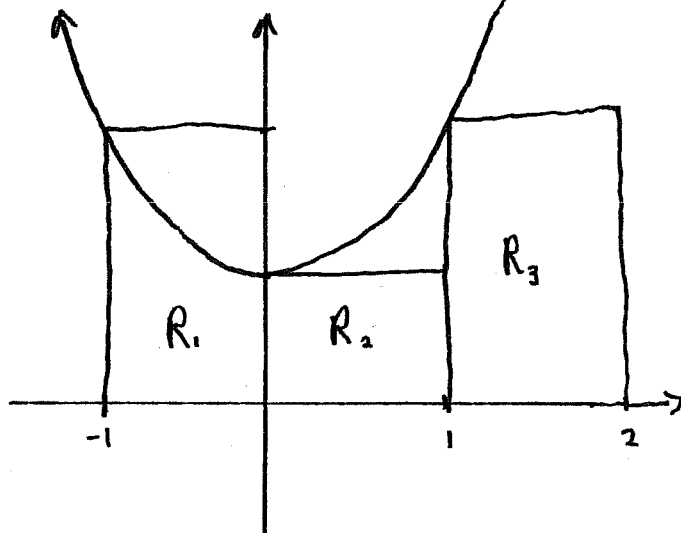
e.

$$\int e^x dx = e^x + C$$

f.

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

Question 2. (4 marks) §5.1 #5c Estimate the area under the graph of $f(x) = 1 + x^2$ from $x = -1$ to $x = 2$ using three rectangles and left endpoints. Sketch the curve and the approximating rectangles.



$$\begin{aligned} \text{Area} &\approx R_1 + R_2 + R_3 \\ &= f(-1)(1) + f(0)(1) + f(1)(1) \\ &= (2)(1) + (1)(1) + (2)(1) \\ &= 5 \end{aligned}$$