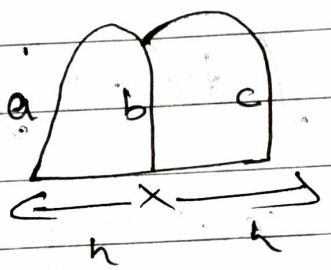
2) $\int \sin x \, dx = \cos x + c$

Q2) Explain Simpson first rule or (1/3) Rule

Ans A) Simpson rule are a set of rules used in ship... stubility and naval architecture, to calculate the areas and volumes of irregular figures

First Rules :-

Mat Multiplier :



es also known as the 1-4-1 rule

Area $\frac{h}{3}(a + 4b + c)$ y/

2) (1/3 Rule)

Simpson's 1/3 rd rule in an extension of the trapezoidal rule in which the integrand is approximately by a second order polynomial. Simpson rule can be derived from the various way using Newton's divided difference polynomial lagrange polynomial, and the method simpson 1/3 rule is difined.

$$\int_a^b F(x)\,dx = h/3\,[(y_0 + y_n) + 4(y_1 + y_3 + y_5 + \dots + y_{n-1}) + 2(y_2 + y_4 + y_6 + \dots + y_{n-2})]$$

(4) Solve the following

$$\int \frac{x-1}{x+1}\,dx \quad \int \frac{x+1-1-1}{x+1}\,dx$$

$$= \int \frac{x+1}{x+1}\,dx - \int \frac{2}{x+1}\,dx$$

$$= \int dx - 2\int (x+1)^{-1}\,dx$$

$$= x - 2\log(x+1) + c$$ Ans