#### Integration Bee

Mathematics Club

Instructions

Question (

Question :

Question 4

Question 5

Question

# INTEGRATION BEE Round 3

Mathematics Club

CFI, IITM

September 15, 2025



## Club

Instruction

Question 0

Question

Question .

Question



$$\int_{1}^{2} x \ dx$$

Question 0

Question 1

Question 2

Question

Question

Question 5

Question 6



#### Evaluate:

$$\int_0^1 \frac{x + x^{\frac{4}{3}} + x^{\frac{5}{3}} - 3x^5}{1 - x} \, \mathrm{d}x$$

Question (

Ougstion

Question 2

Question :

Question

Question 5

Question 6



#### Find the value of

$$\int_0^{\frac{\pi}{4}+1} \tan(x - \tan(x - \tan(x - \cdots))) dx$$

Question (

O .....

Question 2

Question 3

Question 4

Question 5

Question 6



### Find the value of

$$\int_0^1 \frac{\ln(1+x)}{1+x^2} \mathrm{d}x$$

Question (

Question 2

Question 3

Question 4

Question 5

Question 6



#### Evaluate :

$$\int_0^\infty \frac{\sin(\pi x)}{x(1-x^2)} dx$$

#### Mathematics Club

Instructions

Question 0

O .....

Question 2

Question 4

Question 5

Question 6



## Evaluate:

$$\int_0^1 \frac{x^{2024}}{2024!} \left( \ln \left( x \right) \right)^{2024} \, \mathrm{d}x$$

Question 6



Let 
$$I_n$$
 denote :  $I_n = \int_0^n \lfloor \log_n x \rfloor dx$  Find the value of  $\frac{I_3}{I_5}$ .