

## 1. If $I = \int_1^4 (\{x\})^{[x]} dx$ , then $\frac{24}{13}I$ is equal to: (where $[\cdot], \{\cdot\}$ represents GIF and fraction part function respectively)

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- (1) 1 (2) 2
- n part function respectively)
- (3) 3 (4) 4
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  - The value of  $\int\limits_0^{\cdot} [\sin 2x(1+\cos 3x)] dx$  , where [t] denotes the greatest integer function is
- (1)  $\pi$  mathongo we mathon we mathon we mathon we mathon we will be added as a sufficiency with the mathon we will be added as a sufficiency will be added as a sufficiency we will be added as a sufficiency with the sufficiency we will be added as a sufficiency will be added as a sufficiency will be added as a sufficiency with the sufficiency we will be added as a sufficiency with the sufficiency we will be added as a sufficiency with the sufficiency we will be added as a sufficiency with the sufficiency will be added as a sufficiency with the sufficiency we will be added as a sufficiency with the sufficiency will be added as a sufficiency with the sufficiency will be added as a sufficiency with the sufficiency will be added as a sufficiency with the sufficiency will be a
- 3. The value of the integral  $\int_{1/e}^{e} |\log x| dx$  is
  - (1)  $21 + \frac{1}{e}$  | Mathongo |
- 4.  $\int_{-3}^{2} \{|x+1|+|x+2|+|x-1|\} dx$  is equal to (1)  $\frac{31}{2}$  (2)  $\frac{35}{2}$  (3)  $\frac{47}{2}$  (4)  $\frac{39}{2}$
- 5. mathongo ///  $n \frac{3\pi}{4}$  thongo /// mathongo /// mat
- (1)  $\pi\left(\sqrt{2}+1\right)$  mathongo we mathon we mathon we were mathon we will be added to the mathon we will be added to th
- 6. If  $I_1 = \int_0^\pi \frac{x \sin x}{1 + \cos^2 x} dx$ ,  $I_2 = \int_0^\pi x \sin^4 x dx$  then  $I_1 : I_2 =$ (1) 3:4
  (2) 1:2
  (3) 4:3
- The value of  $\int_{-\pi/2}^{\pi/2} \frac{dx}{[x] + [\sin x] + 4}$ , where [t] denotes the greatest integer less than or equal to t, is
- 3.  $\int\limits_{-1}^{1} rac{\sqrt{1+x+x^2}-\sqrt{1-x+x^2}}{\sqrt{1+x+x^2}+\sqrt{1-x+x^2}} dx =$
- ///  $\frac{3\pi}{(1)} \frac{3\pi}{2}$  mathongo /// math
- 9. The value of  $\int_0^{200} \left[ \tan^{-1} x \right] dx$  is (where [t] represents greatest integer less than or equal to t)

  (1)  $200 5 \tan 1$ (2)  $200(\tan 1 1)$ (3) 200(4)  $200 \tan 1$
- 10. The value of  $\int_{0}^{\pi/2} sgn\left(\sin^2 x \sin x + \frac{1}{2}\right) dx$  is equal to, (where, sgn(x) denotes the signum function of x)
- The value of  $\int_{0}^{\infty} sgn(\sin^{2}x \sin x + \frac{1}{2})dx$  is equal to, (where, sgn(x) denotes the signum function of x)

  (1) 0
- /// (3)  $\pi$  ongo /// mathongo ///

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