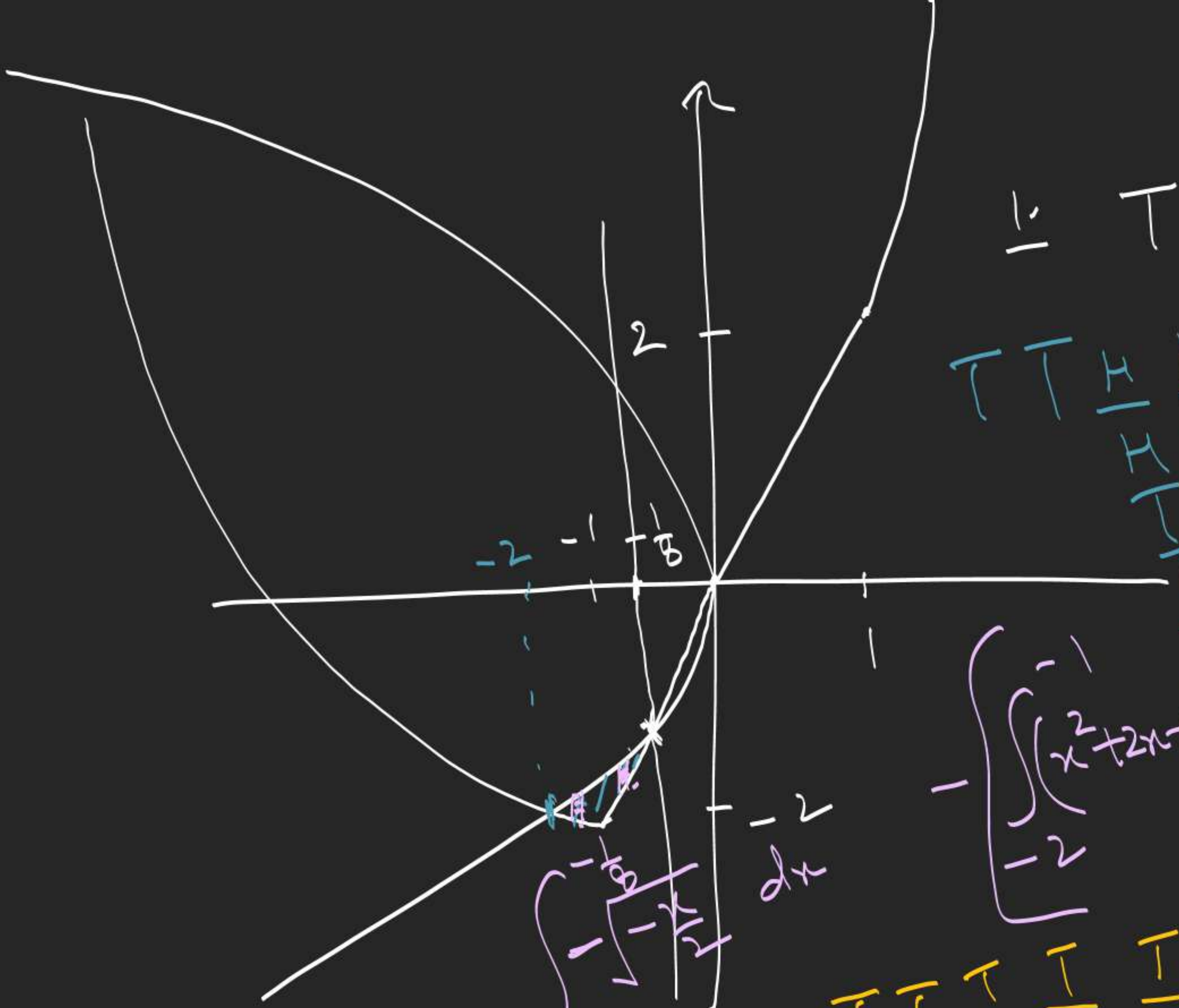
Nishant Jindal




$\frac{1}{2}\times\frac{1}{2}$

$\frac{1}{4}$

$$\int_{-2}^{-\frac{1}{8}} -\sqrt{-\frac{x}{2}}\;dx$$

$$-\left[\int_{-2}^{-1}(x^2+2x-1)\,dx+\int_{-1}^{-\frac{1}{8}}2x\,dx\right]$$

$\frac{2}{8}$

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2. 'n' whole numbers taken at random are multiplied together. Find the probability that the digit at the unit place of their product is

(i) 1 or 3 or 7 or 9 $\quad$ 0 1 $\quad \left(\frac{4}{10}\right)^n$

(ii) 1, 3, 5, 7, 9 $\rightarrow \left(\frac{5}{10}\right)^n$

(iii) 1, 2, 3, 4, 6, 7, 8, 9 $\rightarrow \left(\frac{8}{10}\right)^n$ $\quad \frac{{}^nC_1 4^{n-1} + {}^nC_2 4^{n-2} + \dots {}^nC_n}{10^n}$ $\quad 1$

(iv) 5 ✓ $\rightarrow \frac{5^n - 4^n}{10^n}$ $\quad 31 \times 37 \times 23$

$\frac{8^n - 4^n}{10^n} \leftarrow$ (v) 2, 4, 6, 8 $\quad 11 \times 25 \times 37 \quad 5$

(vi) 0 $\longrightarrow 1 - \left(\frac{8^n + 5^n - 4^n}{10^n}\right)$

(vii) product is odd $\rightarrow \left(\frac{1}{2}\right)^n$

(viii) product is even $\rightarrow 1 - \left(\frac{1}{2}\right)^n$