

## ■ NIMCET Short Tricks (High-Scoring Quick Methods)

### 1■■■ MATHEMATICS SHORT TRICKS

#### ✓ Quadratic Equations

- Sum of roots =  $-b/a$
- Product of roots =  $c/a$
- If equation has equal roots  $\rightarrow D = 0$
- Nature of roots:  $D > 0$  real,  $D < 0$  imaginary

#### ✓ Coordinate Geometry

- Distance:  $\sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$
- Slope of line:  $(y_2 - y_1) / (x_2 - x_1)$
- Equation of line passing two points:

$$y - y_1 = m(x - x_1)$$

#### ✓ Matrices & Determinants

- For  $2 \times 2$  matrix inverse:  $A^{-1} = (1/\det(A)) \times \text{adj}(A)$
- $\det(AB) = \det(A) \times \det(B)$

#### ✓ Limits (Fast Rules)

- $\sin\theta \approx \theta$ ,  $\tan\theta \approx \theta$  ( $\theta \rightarrow 0$ )
- $(a^n - b^n) = (a - b)(a^{n-1} + \dots + b^{n-1})$

#### ✓ Differentiation

- $d/dx (x^n) = n x^{n-1}$
- $d/dx (e^x) = e^x$
- $d/dx (\log x) = 1/x$

#### ✓ Integration

- $\int x^n dx = x^{n+1}/(n+1)$

- $\int 1/x \, dx = \log x$

- $\int e^x \, dx = e^x$

## 2■■ LOGICAL REASONING SHORT TRICKS

### ✓ Number Series

- Check difference → ratio → squares → pattern
- Always test  $+n$ ,  $+2n$ ,  $\times n$ ,  $+n^2$  sequences

### ✓ Directions

- East–West → add/subtract  $x$
- North–South → add/subtract  $y$
- Opposites:  $N \leftrightarrow S$ ,  $E \leftrightarrow W$

### ✓ Blood Relations

- Convert into generations
- Use  $+1$  (father),  $-1$  (son),  $0$  (spouse)

## 3■■ COMPUTER AWARENESS SHORT TRICKS

### ✓ Number System Conversions

- Binary → Decimal: multiply each bit by powers of 2
- Decimal → Binary: divide by 2, note remainders

### ✓ OS Memory

- Fastest → Registers → Cache → RAM → HDD

## 4■■ ENGLISH SHORT TRICKS

### ✓ Error Detection

- Singular verb with singular subject
- “Has” for singular, “Have” for plural

✓ Reading Comprehension

- Read questions first → then scan passage