

CDS-AFCAT 1 2025

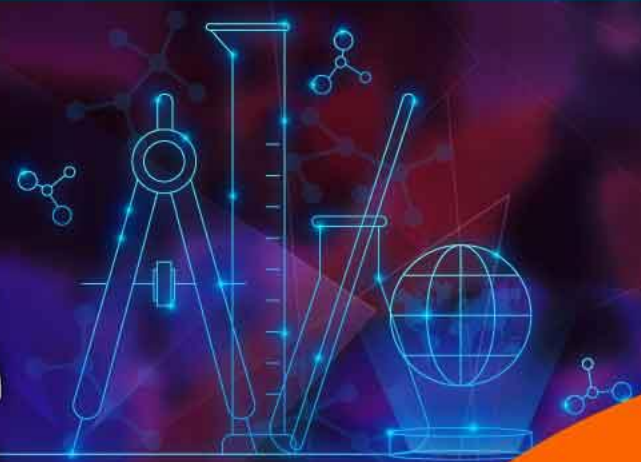
SSBCrack
EXAMS

LIVE

MATHS

NUMBER SYSTEM

CLASS 1



NAVJYOTI SIR



18 Oct 2024 Live Classes Schedule

9:00AM --- 18 OCTOBER 2024 DAILY DEFENCE UPDATES --- DIVYANSHU SIR

SSB INTERVIEW LIVE CLASSES

9:30AM --- COMPLETE SCREENING TESTS --- ANURADHA MA'AM

NDA 1 2025 LIVE CLASSES

1:00PM --- CHEMISTRY - ACIDS-BASES-SALTS --- SHIVANGI MA'AM

4:00PM --- MATHS - COMPLEX NUMBERS - CLASS 3 --- NAVJYOTI SIR

5:30PM --- ENGLISH - ANTONYMS - CLASS 3 --- ANURADHA MA'AM

CDS 1 2025 LIVE CLASSES

1:00PM --- CHEMISTRY - ACIDS-BASES-SALTS --- SHIVANGI MA'AM

5:30PM --- ENGLISH - ANTONYMS - CLASS 3 --- ANURADHA MA'AM

✓ 7:00PM --- MATHS - NUMBER SYSTEM - CLASS 1 --- NAVJYOTI SIR

AFCAT 1 2025 LIVE CLASSES

4:00PM --- STATIC GK - HIGHEST-SMALLEST IN INDIA & WORLD --- DIVYANSHU SIR

5:30PM --- ENGLISH - ANTONYMS - CLASS 3 --- ANURADHA MA'AM

✓ 7:00PM --- MATHS - NUMBER SYSTEM - CLASS 1 --- NAVJYOTI SIR



NUMBER SYSTEM

- ① Numbers -
- ② Divisibility Rules
- ③ Remainder Theorems to find remainders
- ④ Simplification
- ⑤ Surds and Indices
- ⑥ LCM and HCF

DIGITS

→ 10 digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9

NATURAL NUMBERS

1, 2, 3, 4, 5, ...

PRIME AND COMPOSITE NUMBERS

Prime — Number only divisible by 1 and itself. (only 2 factors)

Composite — Numbers that are not prime. (more than 2 factors)

Eg — 23 — 1, 23 (prime number)

24 — 1, 2, 3, 4, 6, 8, 12, 24 (composite numbers)

→ smallest prime number is 2.

→ " composite number is 4.

→ only even prime is 2.

→ 1 is neither prime nor composite.

→ first odd composite number = 9

prime numbers

2, 3, 5, 7, 11, 13, 17, 19, 23

(try to write
from 1-100)

RELATIVELY PRIME / CO - PRIME NUMBERS

→ Two numbers having only one common divisor which is 1.

Eg - 15 and 22

15 - {1, 3, 5, 15}

22 - {1, 2, 11, 22}

So, 15 and 22 are co-prime numbers.

TWIN PRIME NUMBERS

→ Two prime numbers having difference of 2.

11 and 13

3 and 5

17 and 19

5 and 7

(3, 5, 7)



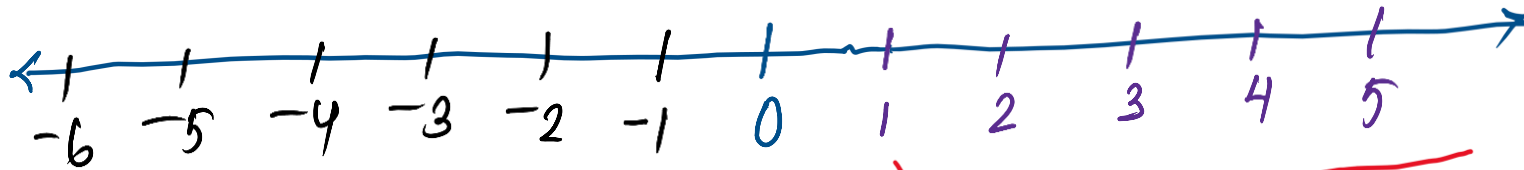
WHOLE NUMBERS

0 included into natural numbers.

0, 1, 2, 3, 4, ...

INTEGERS

(negative) + 0 + (positive)



negative

smallest positive integer = 1

largest negative integer = -1

positive integers

0 is neither positive nor negative integer,

ODD AND EVEN NUMBERS

Odd - Number not divisible by 2.

(It contains 1, 3, 5, 7 or 9 at the unit digit)

13

17 289

Even - Number divisible by 2.

(It contains 0, 2, 4, 6 or 8 at the unit digit)

46

484

786

$$(1) \quad \underline{\text{odd}} + \underline{\text{odd}} = \underline{\text{Even}}$$

$$13 + 5 = 18$$

$$17 + 9 = 26$$

$$(2) \quad \underline{\text{Even}} + \underline{\text{Even}} = \underline{\text{Even}}$$

$$(3) \quad \underline{\underline{\text{odd} + \text{even}}} = \underline{\text{odd}} \rightarrow \text{not divisible by 2.}$$

$$\frac{\text{odd} + \text{even}}{2} \Rightarrow \text{rational number}$$

* -2 is an even integer. (T/F) — True

* There are countable even integers less than 80. (T/F) — False

RATIONAL AND IRRATIONAL NUMBERS

Rational

$\frac{p}{q}$, where p and q
are integers, $q \neq 0$

Terminating

$$\left(\frac{7}{4} = 1.75\right)$$

non-terminating
repeating

$$\frac{1}{3} = 0.333 \dots$$

$$= 0.\overline{3}$$

Irrational

cannot be expressed as $\frac{p}{q}$ form.

non-terminating non-repeating,

$$\pi = 3.142 \dots$$

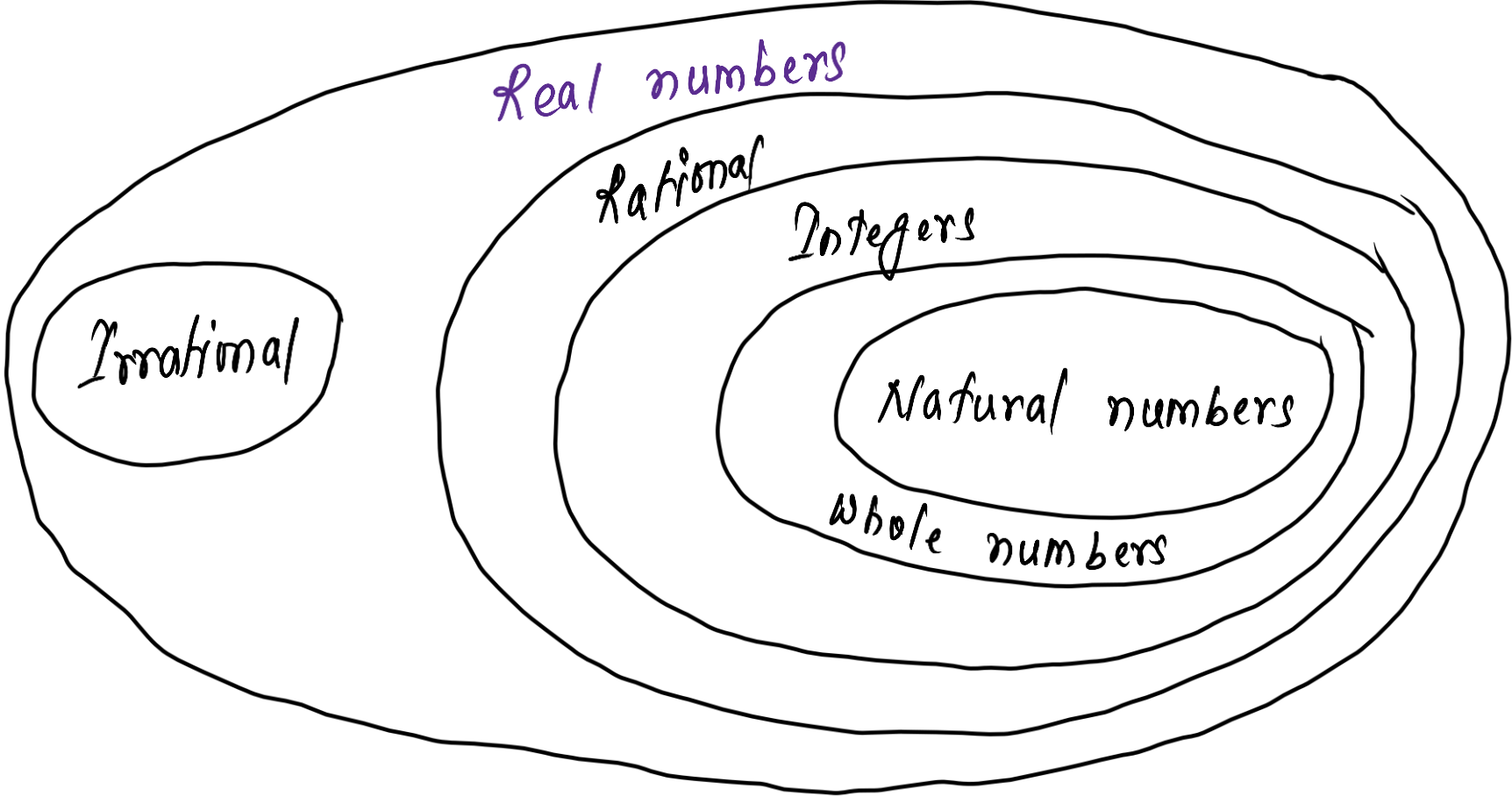
$$\sqrt{2}, \sqrt{3},$$

$$1.4276132914 \dots \left. \begin{array}{l} \sqrt{7}, \sqrt{8} \end{array} \right\}$$

square root of non-perfect squares

REAL NUMBERS

Rational + Irrational Numbers



DIVISIBILITY RULES

2 \rightarrow check unit digit (ones place digit) : 0, 2, 4, 6, 8

3 \rightarrow sum of digits should be divisible by 3.

435

sum of digits = $4 + 3 + 5 = 12$

Then, 435 is divisible by 3.

DIVISIBILITY RULES

4 \longrightarrow Last two digits (ten's and one's digits)
should be divisible by 4.

732 \longrightarrow divisible by 4.

5 \longrightarrow One's digit / unit digit should be 0 or 5.

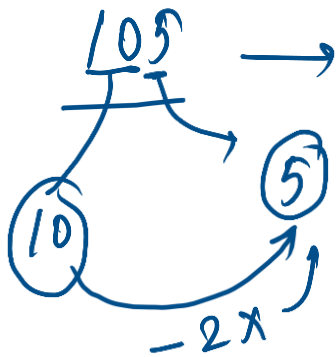
DIVISIBILITY RULES

$$6 \longrightarrow 6 = 2 \times 3$$

should be divisible by both 2 and 3.

$$7 \longrightarrow$$

$$\underline{1071} \longrightarrow 107 - (2 \times 1) = \underline{105}$$



$$105 \longrightarrow 10 - (2 \times 5) = 10 - 10 = 0$$

at last if 0 or
multiple of 7 (7, 14, 21, ...)
then divisible by 7.

$$\begin{array}{r} 17808 \\ \hline 1780 \end{array} \rightarrow 1780 - (2 \times 8) = 1780 - 16 = 1764$$

$$\begin{array}{r} 1764 \\ \hline 176 \end{array} = 176 - (2 \times 4) = 176 - 8 = 168$$

$$\begin{array}{r} 168 \\ \hline 16 \end{array} = 16 - (2 \times 8) = 16 - 16 = 0 \checkmark$$

17808 is divisible by 7.

DIVISIBILITY RULES

8 \longrightarrow Last 3 digits should be divisible by 8.

7512 \longrightarrow 512 is divisible by 8.

9 \longrightarrow sum of digits be divisible by 9.

637812

$6 + 3 + 7 + 8 + 1 + 2 = 27 \rightarrow$ multiple of 9 / divisible by 9.

DIVISIBILITY RULES

10 \rightarrow unit digit/one's digit should be '0'.

EXAMPLE

Which digits should come in place of * and \$ if the number 62684*\$ is divisible by both 8 and 5?

- (a) 4, 0 ✓ (b) 0, 4 ✗
 (c) 2, 0 (d) 4, 4 ✗

6 2 6 8 4 * \$
 0, 5 (for divisibility by 5)

Last 3 digit → $\underline{440}$ ✓ $\underline{420}$ ✗
 (for divisibility by 8)

EXAMPLE

Which digits should come in place of * and \$ if the number 62684*\$ is divisible by both 8 and 5?

- | | |
|----------|----------|
| (a) 4, 0 | (b) 0, 4 |
| (c) 2, 0 | (d) 4, 4 |

Ans: (a)

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RATIO & PROPORTION

CLASS 3

NAVJYOTI SIR

