



airGurukul

UPP CONSTABLE 2026

LIVE

वर्दी 2.0

MATHS

NUMBER SYSTEM

((संख्याओं का वर्गीकरण))



20 JUNE 2026



07:00 PM



AADIL SIR

WELCOME TO



Preparing Bharat, Empowering Futures

airGurukul Institute for Career Growth

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Real Numbers | वास्तविक संख्यायें |

$\sqrt{-a}$

Rational No.
परिमेय संख्या

Irrational No.
अपरिमेय संख्या

$\frac{p}{q}$, P. q. Integers

वो Numbers जिनको $\frac{p}{q}$ form में लिखा जा सकता है।

जो ~~Rational~~ नहीं है, जिनको $\frac{p}{q}$ form में नहीं लिखा जा सकता।

परिमेय संख्या
Rational No.

$\Rightarrow \frac{p}{q}$ की form में लिखी जाती हैं

p पूर्णांक (Integer), $q \neq 0$

Ex $\rightarrow \frac{3}{7}$

$\frac{20}{7}$

$\frac{4}{7}$

$\frac{0}{7}$

Rational No.

$0.3333 \dots \infty = 0.\bar{3}$

Not

$\frac{3}{3}$

$$0.\overline{12121212} \dots \infty = 0.\overline{12} \Rightarrow \boxed{\frac{12}{99}}$$

$$1.\overline{325325325} \dots \infty = 1.\overline{325} = 1 + \frac{325}{999}$$

$$\boxed{1 \frac{325}{999}}$$

$$\frac{1}{1} \cdot \sqrt{4} \cdot \sqrt{9} \cdot \cancel{\sqrt{16}} \cdot \sqrt{25} = \sqrt{4 \times 9 \times 25}$$

$\downarrow$ $\downarrow$
 $\frac{1}{2}$ $\frac{3}{3}$

Irrational No.
अपरिमेश सं०

$\frac{p}{q}$ की form में नहीं होती है

$\sqrt{2}$ Irrational,
7

Ex $\rightarrow \sqrt{2}, \sqrt{3}, \sqrt{5}, \sqrt{12}$ अपरिमेश
 $\sqrt{12} = \sqrt{4 \times 3} = 2\sqrt{3}$
 $\frac{22}{7}$ परिमेश

0.314159265...

➤ Rational number = Integers + terminating decimal + non terminating and repeating decimal ✓

➤ परिमेय संख्या = पूर्णांक + शांत दशमलव + अशांत और आवर्ती दशमलव ✓

✓ ➤ All non. terminating, Non-repeating (Non recuning) decimals are irrational numbers.

$$\pi = \underline{3.141592 \text{ -----}}$$

$$\sqrt{3} = 1.7320508 \text{ -----}$$

$$\sqrt{2} = 1.4142135 \text{ -----}$$

1. Which of the following is both rational and an integer?

इनमें से कौन-सी संख्या ~~सेटेशनल~~ (वूर्णनशील) और पूर्णांक, दोनों है? परिमेय

a) $\frac{1}{2}$

b) 3

c) $\sqrt{2}$

d) π

$\frac{p}{q}, q \neq 0$

$\frac{p}{q}, q = 1$

$$0.\overline{777} = \frac{7}{9}$$

$$0.3 = \frac{3}{10}$$

2. Which one of the following is correct?

- a) Decimal expansion of a rational number is terminating
- b) Decimal expansion of a rational number is non-terminating
- c) Decimal expansion of an irrational number is terminating
- d) Decimal expansion of an irrational number is non-terminating and non-repeating

इनमें से कौन-सा सही है?

- ☒ a) परिमेय संख्या का दशमलव प्रसार शांत (terminating) होता है
- ☒ b) परिमेय संख्या का दशमलव प्रसार अशांत (non-terminating) होता है
- ☒ c) अपरिमेय संख्या का दशमलव प्रसार शांत (terminating) होता है
- ☒ d) अपरिमेय संख्या का दशमलव प्रसार अशांत (non-terminating) और अनावर्ती (non-repeating) होता है

Integers | पूर्णांक

Pair

$$\frac{p}{q}, q \neq 0$$

Negative integers
(ऋणात्मक पूर्णांक)

Natural Integers
उदासीन पूर्णांक

Positive integers
(धनात्मक पूर्णांक)

Non-Positive Integers

+1 +2 +3 +4 +5 +6 + ∞

Non-Negative Integers

यहाँ
रुका

-8 -5 -4 -3 -2 -1

0

Non – Negative Integers (whole No.)

(0, 1, 2, 3, 4, ... ∞) ← पूर्ण संख्या

Natural No. (Positive Integers)
(प्राकृतिक संख्या)

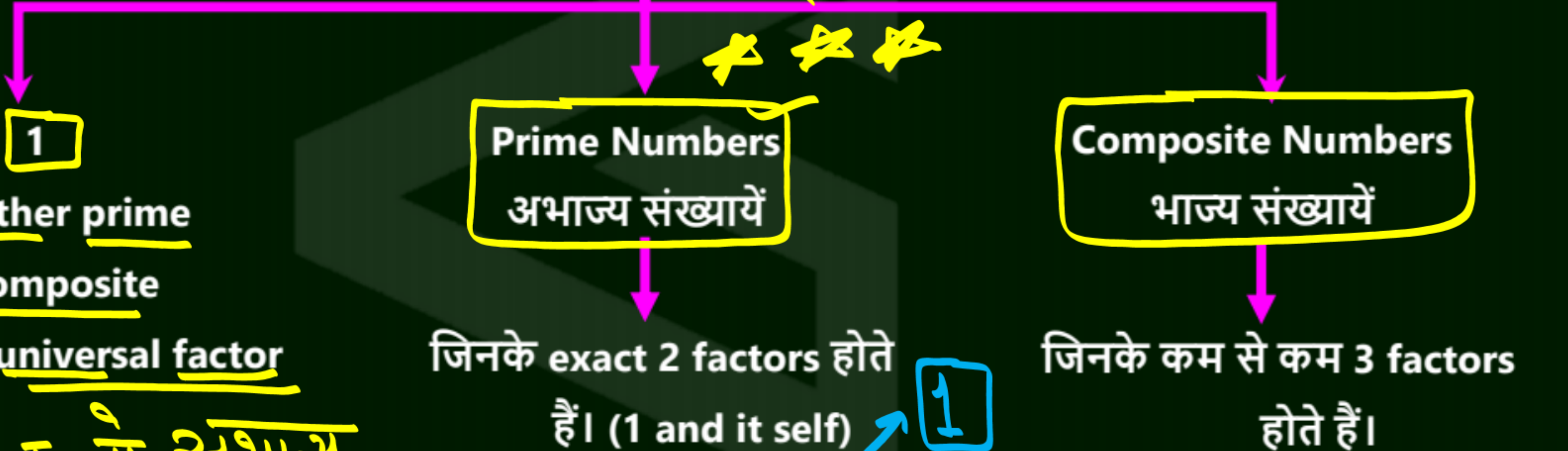
1, 2, 3, 4, 5, 6, ... ∞

Whole No.
(पूर्ण संख्या)

प्राकृतिक संख्याओं से पहले
0 लगा देने से,
(0, 1, 2, 3, 4, 5, ... ∞)

Natural Numbers | प्राकृतिक संख्यायें |

(1, 2, 3, 4, 5, 6 - - - ∞)



➤ 1 is neither prime
nor composite

➤ 1 is an universal factor

1 न तो अभाज्य
होता है और न ही
भाज्य होता है

① Only 2 factors
② दोनों factors अलग-2 होते हैं
itself

$$\boxed{1} \begin{matrix} \nearrow \\ \searrow \end{matrix} \begin{bmatrix} 1 \\ 1 \end{bmatrix}^{\times}$$

$$\checkmark \boxed{2} \begin{matrix} \nearrow \\ \searrow \end{matrix} \begin{matrix} 1 \\ 2 \end{matrix} \quad \textcircled{\checkmark} 2 \quad \textcircled{\checkmark} 2$$

$$\boxed{3} \begin{matrix} \nearrow \\ \searrow \end{matrix} \begin{bmatrix} 1 \\ 3 \end{bmatrix} \checkmark$$

$$4 \rightarrow \overset{\checkmark}{1}, \overset{\checkmark}{2}, \overset{\checkmark}{4} \quad \textcircled{\times} 3^{\times}$$

25

2, 3, 5, 7, 11, 13, 17, 19,
 23, 29, 31, 37, 41, 43, 47,
 53, 59, 61, 67, 71, 73, 83,
 89, 97

THANK YOU



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