

$$\frac{280}{35}$$

$$\frac{n}{280}, R=73$$

$$\frac{n}{35} \text{ if } R=?$$

$$\begin{array}{r} 35 \overline{) 73} 2 \\ \underline{70} \\ 3 \end{array}$$

$$4, 2, 3, 7.$$

$$R$$



$$47^{26} - 1^{26} \rightarrow (47-1) \checkmark$$

$$\checkmark (47+1)$$

Q  $\Rightarrow (47^{25} - 1)$  is exactly divisible

by:

21, 24, 23, 19

$$47^{25} - 1^{25}$$

$$a^n - b^n \rightarrow (a-b) \text{ विषम (odd)}$$

$$47-1$$

$$\Rightarrow 46$$

$$\begin{array}{c} 1 \\ \swarrow \downarrow \searrow \\ 1 \quad 2 \quad 23 \quad 46 \end{array}$$

$$\cancel{(a+b)}$$

$$\text{Q. } \frac{n}{4}, R=3$$

$$\frac{3n^2+n}{4}, R=?$$

$$n=3$$

$$3n^2+3 \Rightarrow \textcircled{30}$$

$$\begin{array}{r} 7 \overline{) 30} 4 \\ \underline{28} \phantom{0} \\ 2 \phantom{0} \end{array}$$

$$\frac{30}{7} \textcircled{R=2}$$

$$\textcircled{2, 3, 4, 5}$$

पूर्ण संख्या

$$\begin{aligned}
 & n^3 - n \\
 \rightarrow & n(n^2 - 1) \\
 & n(n-1)(n+1) \\
 & (n-1)(n)(n+1)
 \end{aligned}$$

Q- यदि  $n$  एक प्राकृत संख्या है तो  
 $n^3 - n$  हमेशा किस संख्या से  
 divisible होगा?

2, 3, 6, 9  
 \* तीन लगातार संख्याओं का गुणनफल  
 हमेशा 6 से divisible  
 होगा

(Non Terminating)  
(Non Repeating)  
 $0.2341324 \dots$



दशमलव

Terminating

$0.23$

$0.52$

$1.73$

Repeating

$9.6241$

$0.222222 \Rightarrow 0.\overline{2}$

$0.232323 \dots$

$0.\overline{23}$

Rational

Q.  $0.\overline{23}$  कौसी संख्या है?

$0.23232323 \dots$

अ) अपरिमैय (Irrational)

✓ ब) परिमैय (Rational)

ग) अभाज्य (prime)

द) भाज्य संख्या (Composite)

$$\begin{cases} \sqrt{36} \Rightarrow 6 \\ \sqrt{49} \Rightarrow 7 \end{cases}$$

$$(\sqrt{3} + \sqrt{11})^2$$

$$(\sqrt{3})^2 + (\sqrt{11})^2 + 2\sqrt{3} \cdot \sqrt{11}$$

$$3 + 11 + 2\sqrt{33}$$

$$14 + 2\sqrt{33}$$

$$\begin{matrix} \sqrt{2}, \sqrt{3}, \\ \sqrt{5}, \sqrt{7}, \\ \sqrt{11}, \sqrt{13} \end{matrix}$$

$$(a+b)^2$$

Q.  $(\sqrt{3} + \sqrt{11})^2$  एक कैसी संख्या है?

1, 2, 3, 4, 5, 6, ...

a) प्राकृत संख्या (Natural)

b) अपरिमैय संख्या (Irrational)

c) पूर्ण संख्या (Whole No)

d) परिमैय संख्या (Rational)

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

वो

Digital Sum  $\rightarrow 1, 4, 7, 9$

$1^2 = 1$   
 $2^2 = 4$   
 $3^2 = 9$   
 $4^2 = 16 \Rightarrow 7$   
 $5^2 = 25 \Rightarrow 7$   
 $6^2 = 36 \Rightarrow 9$   
 $7^2 = 49 \Rightarrow 13 \Rightarrow 1+3 \Rightarrow 4$

$8^2 = 64 \Rightarrow 10$   
 $9^2 = 81$   
 $10^2 = 100$   
 $11^2 = 121$   
 $12^2 = 144$   
 $13^2 = 169 \Rightarrow 10 \Rightarrow 1+0 \Rightarrow 1$   
 $14^2 = 196 \Rightarrow 10 \Rightarrow 1+0 \Rightarrow 1$   
 $15^2 = 225 \Rightarrow 9$

$18^2 = 324 \Rightarrow 9$   
 $49^2 = 2401 \Rightarrow 7$   
 $51^2 = 2601 \Rightarrow 9$   
 $105^2 = 11025 \Rightarrow 9$

$85^2 = 7225$   
 $16 \Rightarrow 1+6 \Rightarrow 7$

8. निम्न में से कौन सी संख्या पूर्ण वर्ग संख्या नहीं है?

- $9 \leftarrow 1+8 \leftarrow 18 \leftarrow 6$
- a) 2025
  - b) 16641
  - c) 1250
  - d) 9801

Q. For any natural no.  $n$   
 $6^n - 5^n$ , always ends with-

$$6^n - 5^n$$

$$\text{U.D.} \rightarrow 6 - 5$$

$$\textcircled{1}$$

में  $n$  प्राकृत  
सिखा है

तो U.D. = ?

- a) 2
- $\textcircled{\text{b) 1}}$
- c) 4
- d) 5

Q.  $91 \times 92 \times 93 \times \cdot 95 \cdot \times 99$  में इकाई  
आंक = ?

$$10 \times 63 \\ \Rightarrow 630$$

$$10 \times 567 \\ \Rightarrow 5670$$

a) 2

b) 9

c) 0

d) 4

$$2^3 \times 5^3 \times 7^2$$

$$\downarrow$$

$$2^0 \quad 5^0 \quad 7^0$$

$$2^2 \quad 5^2 \quad 7^2$$

$$\hline 2 \times 2 \times 2 = 8$$

$$2^3 \times 5^3 \times 7^2$$

$$\downarrow$$

$$2^3 \quad 5^3 \quad 7^0$$

$$\hline 2 \times 2 \times 1 = 4$$

Q.  $49000$  के factors

$$\text{Total} \rightarrow (3+1)(3+1)(2+1) = 48$$

$$\text{Even} \rightarrow 3 \times (3+1)(2+1) = 36$$

$$\text{Odd} \rightarrow (3+1)(2+1) = 12$$

$$\text{prime} \rightarrow 3$$

$$\text{perfect square} \rightarrow 8$$

$$\text{perfect cube} \rightarrow 4$$

prime No.  
असह्य संख्या

1, 2, 3, 4, 6, 12

prime  
No.

12

$\rightarrow$

$2^2 \times 3^1$

2

$2+1 \Rightarrow 3$

prime

$$\begin{aligned}
 345 &\Rightarrow 5 \times 69 \\
 &= 5 \times 3 \times 23 \\
 &3' \times 5' \times 23' \\
 &\underline{3^0} \quad \underline{5^0} \quad \underline{23^0} \\
 &\overline{1} \times \overline{1} \times \overline{1} \rightarrow 1
 \end{aligned}$$

Q. 345 3 Factor

$$\text{Total} \rightarrow (1+1)(1+1)(1+1) = 8$$

$$\text{Even} \rightarrow 0$$

$$\text{Odd} \rightarrow 8$$

$$\text{prime} \rightarrow 3$$

$$\text{perfect square} \rightarrow 1$$

$$\text{perfect cube} \rightarrow 1$$

Q.  $2 \times 4 \times 6 \times 8 \times \dots \dots \dots 1020$  के  
अन्त में No. of zeros-?

$$\underbrace{2 \times 4 \times 6 \times 8 \times \dots \dots \dots}_{1020}$$
$$\begin{array}{c} 1020 \\ \swarrow \quad \searrow \\ 510 \quad 510 \end{array}$$

$$\frac{510}{5} \Rightarrow \boxed{102}$$

$$\frac{102}{5} \Rightarrow \boxed{20}$$

$$\frac{20}{5} \Rightarrow \boxed{4} \Rightarrow 126$$