

**13.** *What is the value of  $8.\overline{74} + 6.\overline{47}$ ?*

[A]  $15\frac{2}{9}$

$$8 + \overset{\times}{\overline{74}} + 6 + \overset{\times}{\overline{47}}$$

[B]  $14\frac{7}{9}$

[C]  $16\frac{1}{9}$

$$= 14 + \frac{67}{90} + \frac{43}{90}$$

[D]  $15\frac{1}{3}$

$$= 14 + \frac{110}{90}$$

$$= 14 + 1\frac{20}{90}$$

$$= 15\frac{2}{9}$$

14. *Express the following into vulgar fraction:*

निम्नलिखित को अशिष्ट भिन्न में व्यक्त करें:

$$0.\overset{\times}{6}\overline{41} + 0.\overline{23}$$

**(RRB RPF SI 2024)**

✓ [A]  $173/198$

[B]  $173/999$

[C]  $173/199$

[D]  $173/99$

$$\begin{aligned} &= \frac{635}{990} + \frac{230}{990} \\ &= \frac{\cancel{865}}{\cancel{990}} = \frac{173}{198} \end{aligned}$$

15. *If  $A = 0.\underline{312}$ ,  $B = 0.\underline{415}$  &  $C = 0.30\underline{9}$ , then what is the value of  $A + B + C$ ?*

यदि  $A = 0.\underline{312}$ ,  $B = 0.\overset{\times}{4}\underline{15}$  &  $C = 0.30\underline{9}$ , तो  $A+B+C$  का मान क्या है?

[A]  $1097/1100$

[B]  $1211/1100$

[C]  $1043/1100$

[D]  $1141/1100$

$$= \frac{309}{990} + \frac{411}{990} + \frac{\cancel{279}}{900}$$

$$= \frac{\cancel{8}}{11} + \frac{\cancel{31}}{100}$$

$$= \frac{1141}{1100}$$

16. Find the value of  $2.\underline{3}\underline{8} \div 0.5\underline{4}$ .  
 $2.3\bar{8} \div 0.5\bar{4}$  का मान ज्ञात कीजिए:

[RRB JE 2024]

~~[A]~~  $4\frac{19}{49}$

[C]  $5\frac{26}{51}$

$$\frac{\cancel{215}}{\cancel{30}} \div \frac{\cancel{49}}{\cancel{30}}$$

$$= \frac{215}{49}$$

[B]  $3\frac{17}{24}$

[D]  $6\frac{29}{51}$

17. Let  $x = 1.05 \div 95 \times 0.409$  &  $y = (0.75 \div 0.226) \times (5.09 \div 1.7)$ , then the value of  $xy$  is?

मान लीजिए  $x = 1.05 \div 95 \times 0.409$  &  $y = (0.75 \div 0.226) \times (5.09 \div 1.7)$  तो  $xy$  का मान है?

(ICAR Technician 2022)

[A] 4.5

[C] 0.45

[B] 5.4

[D] 0.54

$$\left( \frac{105}{95} \times \frac{409}{1000} \right) \times \left( \frac{75}{226} \times \frac{509}{170} \right)$$

$$= \frac{9}{20} \times 10 = 4.5$$

$$x = \frac{105}{95} \times \frac{409}{1000} = \frac{9}{20}$$

$$y = 10$$

18.

*Simplify:*

$$8.\overline{546} + 5.\overline{927} = ?$$

decimal  
#

$$\text{max}(1, 0) = 1$$

$$\text{LCM}(2, 3) = 6$$


$$\begin{array}{r} 8.\overline{546} \\ + 5.\overline{927} \\ \hline 14.\overline{4743925} \end{array}$$

$$= 14.\overline{4743925} \text{ Ans}$$

$$\begin{array}{r} + 0.8\bar{6} \\ + 0.4\bar{7} \\ \hline \end{array}$$

$$\begin{array}{r} + 0.8666 \dots\dots\dots 6666 \\ + 0.4777\dots\dots\dots 7777 \\ \hline \end{array}$$

$$= 1.3444\dots\dots\dots 4443$$



$$= 1.3\bar{4}$$



19. *Simplify:*

$$2.\underline{856} + 3.\underline{74} + 5.\underline{8576} = ?$$

$$\text{mod}(1, 0, 3) = 3$$

$$\text{LCM}(2, 2, 1) = 2$$

	× × ×			
2.	856	56	5656	5656
3.	747	47	4747	4747
+ 5.	857	66	6666	6666
	12.461	<u>70</u>	7069	7069

$$= 12.461\overline{70}$$

20. What is  $\overline{3.76} - 1.\overline{4576}$  equal to?

~~[A]~~  $\underline{2.3100191}$

[B]  $\underline{2.3101091}$

[C]  $\underline{2.3110091}$

[D]  $\underline{2.3110901}$

$\text{max}(0, 1) = 1$

$\text{LCM}(2, 3) = 6$

~~$$\begin{array}{r} \times \overline{3.7676767} \quad | \quad 676 \\ - 1.4576576 \quad | \quad 576 \\ \hline 2.3100191 \quad | \quad 100 \end{array}$$~~

21. *The value of  $22.\underline{4} + 11.5\underline{67} - 33.5\underline{9}$  is:*

**$22.\underline{4} + 11.5\underline{67} - 33.5\underline{9}$  का मान है:**

[A]  **$0.\underline{32}$**

[C]  **$0.3\underline{4}$**

[B]  **$0.4\underline{12}$**

[D]  **$0.\underline{412}$**

22. The value of  $0.\underline{47} + 0.\underline{503} - 0.\underline{39} \times 0.\underline{8}$  is:

$0.\overset{\times}{\underline{47}} + 0.\overset{\times}{\underline{503}} - 0.\overset{\times}{\underline{39}} \times 0.\overset{\times}{\underline{8}}$  का मान क्या है।

[A]  $0.\underline{615}$  ✗

[B]  $0.\underline{615}$

[D]  $0.\underline{625}$  ✓✓

[D] ✗  $0.\underline{625}$

(CGL  
MAINS  
2018)

$LCM(1, 2, 1) = 2$

$$\begin{array}{r} \times \overline{\phantom{00}} \\ + \cdot 4 \overline{77} \\ - \cdot 5 \ 03 \\ \cdot 3 \ 55 \\ \hline \cdot 6 \ 25 \end{array}$$

~~$\begin{array}{r} \cdot 77 \\ \cdot 03 \\ \cdot 55 \\ \hline \cdot 25 \end{array}$~~

23. How many value of  $y$  are possible if  $.x\overline{y}z + 0.z\overline{y}x = \frac{164}{99}$  ?

$y$  के कितने मान संभव हैं यदि  $0.\overline{xy}z + 0.\overline{zyx} = \frac{164}{99}$  ?

[A] 2

[B] 3

[C] 4

[D] 5

$x, y, z \rightarrow$  simple  
digit  
(0-9)

$$5x + 5z + y = 82$$

$$y = 82 - 5(x+z)$$

$$y = 2, 7 \checkmark$$

$$\frac{100x + 10y + z - x + 100z + 10y + x - z}{990} = \frac{164}{99}$$

$$\frac{100x + 100z + 20y}{990} = \frac{164}{99}$$

$$764 = 7 \times 100 + 6 \times 10 + 4$$

$$xyz = 100x + 10y + z$$

# Square (1-50)

याद करो

Square	Value	Square	Value	Square	Value	Square	Value	Square	Value
$1^2$	1	$11^2$	121	$21^2$	441	$31^2$	961	$41^2$	1681
$2^2$	4	$12^2$	144	$22^2$	484	$32^2$	1024	$42^2$	1764
$3^2$	9	$13^2$	169	$23^2$	529	$33^2$	1089	$43^2$	1849
$4^2$	16	$14^2$	196	$24^2$	576	$34^2$	1156	$44^2$	1936
$5^2$	25	$15^2$	225	$25^2$	625	$35^2$	1225	$45^2$	2025
$6^2$	36	$16^2$	256	$26^2$	676	$36^2$	1296	$46^2$	2116
$7^2$	49	$17^2$	289	$27^2$	729	$37^2$	1369	$47^2$	2209
$8^2$	64	$18^2$	324	$28^2$	784	$38^2$	1444	$48^2$	2304
$9^2$	81	$19^2$	361	$29^2$	841	$39^2$	1521	$49^2$	2401
$10^2$	100	$20^2$	400	$30^2$	900	$40^2$	1600	$50^2$	2500

## Cube (1-30)

Cube	Cube Value	Cube	Cube Value	Cube	Cube Value
$1^3$	1	$11^3$	1331	$21^3$	9261
$2^3$	8	$12^3$	1728	$22^3$	10648
$3^3$	27	$13^3$	2197	$23^3$	12167
$4^3$	64	$14^3$	2744	$24^3$	13824
$5^3$	125	$15^3$	3375	$25^3$	15625
$6^3$	216	$16^3$	4096	$26^3$	17576
$7^3$	343	$17^3$	4913	$27^3$	19683
$8^3$	512	$18^3$	5832	$28^3$	21952
$9^3$	729	$19^3$	6859	$29^3$	24389
$10^3$	1000	$20^3$	8000	$30^3$	27000

❖ अगर last में 5 आए तो उसका वर्ग कैसे निकालते हैं?  $\Rightarrow (5^2 = 25)$



$$\# 25^2 = (2 \times 3) | 5^2 \\ = 625$$

$$\# 35^2 = (3 \times 4) | 5^2 \\ = 1225$$

$$\# 45^2 = (4 \times 5) | 5^2 \\ = 2025$$

$$\# 55^2 = (5 \times 6) | 5^2 \\ = 3025$$

$$\# 65^2 = (6 \times 7) | 5^2 \\ = 4225$$

$$\# 75^2 = (7 \times 8) | 5^2 \\ = 5625$$

$$\# 85^2 = (8 \times 9) | 5^2 \\ = 7225$$

$$\# 95^2 = (9 \times 10) | 5^2 \\ = 9025$$

$$\# 99.5^2 = (99 \times 100) | 5^2 \\ = 9900.25$$

$$\left(140\frac{1}{2}\right)^2 = 140.5^2 = 19740.25 \checkmark$$

Base 100  $\Rightarrow$

$$103^2 = (103+3) \cdot 3^2 \\ = 10609 \checkmark$$

$$107^2 = (107+7) \cdot 7^2 \\ = 11449$$

$$98^2 = (98-2) \cdot 2^2 \\ = 9604$$

$$87^2 = (87-13) \cdot 13^2 \\ = 74 \cdot 169 \\ = 7569 \checkmark$$

$$116^2 = (116+16) \cdot 16^2 \\ = 132 \cdot 256 \\ = 13456$$

$$123^2 = (123+23) \cdot 23^2 \\ = 146 \cdot 529 \\ = 15129 \checkmark$$

# BASE :- 100



$$\# 103^2 = (103 + 3) \left| 3^2 \right. \\ = 10609$$

$$\# 107^2 = (107 + 7) \left| 7^2 \right. \\ = 11449$$

$$\# 121^2 = (121 + 21) \left| 21^2 \right. \\ = 142 : 441 \\ = 14641$$

$$\# 127^2 = (127 + 27) \left| 27^2 \right. \\ = 154 : 729 \\ = 16129$$

$$\# 89^2 = (89 - 11) \left| 11^2 \right. \\ = 78 : 121 \\ = 7921$$

$$\# 87^2 = (87 - 13) \left| 13^2 \right. \\ = 74 : 169 \\ = 7569$$

# BASE :- 50



# इसके लिए हम 100 का  $\left(\frac{1}{2}\right) = 50$

$$\# 54^2 = \frac{1}{2}(54 + 4) \mid 4^2$$
$$= 2916 \checkmark$$

$$\# (64)^2 = \frac{1}{2}(64 + 14) \mid 14^2$$
$$= \frac{1}{2} \times 78 : 196$$
$$= 39 : 196$$
$$= 4096 \checkmark$$

$$\# 46^2 = \frac{1}{2}(46 - 4) \mid 4^2$$
$$= 2116$$

$$\# 42^2 = \frac{1}{2}(42 - 8) \mid 8^2$$
$$= 1764$$

$$69^2 = \frac{1}{2} \times 88 : 361$$
$$= 4761$$

# BASE :- 200



# यह 200 , 100 का दो गुणा है,  
तो

$$\begin{aligned} \# (217)^2 &= 2(217 + 17) \mid 17^2 \\ &= 2 \times 234 \mid 289 \\ &= 468 \mid 289 \\ &= 47089 \end{aligned}$$

$$\begin{aligned} \# (213)^2 &= 2(213 + 13) \mid 13^2 \\ &= 2 \times 226 \mid 169 \\ &= 452 \mid 169 \\ &= 45369 \end{aligned}$$

$$\begin{aligned} \# 191^2 &= 2(191 - 9) \mid 9^2 \\ &= 2 \times 182 \mid 81 \\ &= 36431 \end{aligned}$$

$$\begin{aligned} \# 187^2 &= 2(187 - 13) \mid 13^2 \\ &= 2 \times 174 \mid 169 \\ &= 348 \mid 169 \\ &= 34969 \end{aligned}$$



# अगर हम BASE 100 लेते हैं तो 1 से गुणा ✓

# अगर हम BASE 50 लेते हैं तो  $\frac{1}{2}$  से गुणा

# अगर हम BASE 150 लेते हैं तो  $\frac{3}{2}$  से गुणा ✓

# अगर हम BASE 200 लेते हैं तो 2 से गुणा

# अगर हम BASE 250 लेते हैं तो  $\frac{5}{2}$  से गुणा

# अगर हम BASE 300 लेते हैं तो 3 से गुणा

# अगर हम BASE 450 लेते हैं तो  $\frac{9}{2}$  से गुणा

# अगर हम BASE 500 लेते हैं तो 5 से गुणा

# अगर हम BASE 850 लेते हैं तो  $\frac{17}{2}$  से गुणा

# अगर हम BASE 1000 लेते हैं तो 10 से  
गुणा