## Type # 1

❑ **સમજૂતી :**

❖ $\sqrt{x\sqrt{x\sqrt{x\sqrt{x\ldots\infty}}}} = ? \quad = x$

⇨ ∞ હોય ત્યારે જવાબ જે સંખ્યા વર્ગમૂળ હોય તે જ આવશે.

Ex. $\sqrt{x\sqrt{x\sqrt{x\sqrt{\ldots\ldots\infty}}}} = ? = x$

---

❖ $\sqrt{x\sqrt{x\sqrt{x}}} = ?$

⇨ ∞ ન હોય ત્યારે આધાર તરીકે '$x$' લેવાનો અને તેનો ઘાતાંક 2 લેવો, જેટલી સંખ્યામાં '$x$' હોય તે તેના ઘાત તરીકે લેવી.

⇨ એટલે કે . . . . $(2)^3 = 8$ લેવા.

⇨ આવેલા જવાબને જે તે સંખ્યાની ઘાતના છેદમાં 8 મુકવા અને તેમાંથી 1 બાદ કરીને ( 8 − 1 = 7 ) તે સંખ્યાને અંશમાં મુકવી.

⇨ એટલે કે . . . $x^{\frac{7}{8}}$

Ex. $\sqrt{x\sqrt{x\sqrt{x\sqrt{x}}}} = ?$

$\therefore (2)^4 = 16$

$\therefore x^{\frac{15}{16}}$

---

❖ $\sqrt{2\sqrt{2\sqrt{2\sqrt{2}\ldots\ldots\infty}}} = ? \quad = 2$

---

❖ $\sqrt{2\sqrt{2\sqrt{2\sqrt{2\sqrt{2}}}}} = ?$

$\therefore 2^5 = 32$

$\therefore 2^{\frac{31}{32}}$

---

❑ **યાદ રાખો :**

| | | |
|---|---|---|
| $2^1 = 2$ | $2^6 = 64$ | $2^{11} = 2048$ |
| $2^2 = 4$ | $2^7 = 128$ | $2^{12} = 4096$ |
| $2^3 = 8$ | $2^8 = 256$ | |
| $2^4 = 16$ | $2^9 = 512$ | |
| $2^5 = 32$ | $2^{10} = 1024$ | |

**(1)** $\sqrt{2\sqrt{2\sqrt{2\sqrt{\ldots\ldots\infty}}}}$

(A) $\sqrt{2}$ (B) 2 (C) $2\sqrt{2}$ (D) 4

**Solution :**

⇨ $\sqrt{2\sqrt{2\sqrt{2\sqrt{\ldots\ldots\infty}}}} = 2$

$\boxed{\therefore \text{(B) } 2}$

---

**(2)** $\sqrt{5\sqrt{5\sqrt{5\sqrt{5}}}} = ?$

(A) 5 (B) $5^{\frac{15}{16}}$ (C) 10 (D) $5^{\frac{17}{18}}$

**Solution :**

⇨ આધાર તરીકે 5 લેવા,

⇨ 2 ની 4 ઘાત લેવી.

⇨ આધારની ઘાતમાં છેદમાં 16 અને અંશમાં 15 મુકવા.

( ∵ 16 − 1 = 15 )

⇨ $(2)^4 = 16$

$\therefore (5)^{\frac{15}{16}}$

$\boxed{\therefore \text{(B) } 5^{\frac{15}{16}}}$

---

❖ $\sqrt{x \div \sqrt{x \div \sqrt{x \div \sqrt{x\ldots\ldots\infty}}}}$

⇨ જો રકમમાં ∞ આપેલ હોય તો, . . . .

⇨ આપેલ સંખ્યાનું ઘનમૂળ એ જવાબ રહેશે.

⇨ $\sqrt[3]{x}$

---

**(3)** $\sqrt{8 \div \sqrt{8 \div \sqrt{8 \div \sqrt{8\ldots\ldots\infty}}}}$

(A) 2 (B) $2^{\frac{1}{2}}$ (C) $2^3$ (D) $2^{\frac{3}{4}}$

**Solution :**

⇨ અહીં 8 હોવાથી 8 નું ઘનમૂળ જવાબ આવશે.

⇨ 8 નું ઘનમૂળ $= \sqrt[3]{8}$

$= 2$ ( ∵ $2 \times 2 \times 2$ )

$= 2$

$\boxed{\therefore \text{(A) } 2}$

❑ **યાદ રાખો :**

⇨ 1 થી 10 ના ઘન

| | |
|---|---|
| $1^3 \rightarrow 1$ | $6^3 \rightarrow 216$ |
| $2^3 \rightarrow 8$ | $7^3 \rightarrow 343$ |
| $3^3 \rightarrow 27$ | $8^3 \rightarrow 512$ |
| $4^3 \rightarrow 64$ | $9^3 \rightarrow 729$ |
| $5^3 \rightarrow 125$ | $10^3 \rightarrow 1000$ |

---

**(4)** $\sqrt{27 \div \sqrt{27 \div \sqrt{27 \div \ldots\ldots \infty}}}$

(A) 2 (B) 3 (C) $\sqrt{3}$ (D) $\sqrt[3]{3}$

**Solution :**

⇨ 27 નું ઘનમૂળ = 3

∴ (B) 3

---

❑ **સરવાળા – બાદબાકી :**

$$\sqrt{2 + \sqrt{2 + \sqrt{2 + \sqrt{2 + \ldots\ldots \infty}}}} = ?$$

⇨ અહીં, જે સંખ્યા આપેલી હોય તેનો ક્રમિક સંખ્યાનો ગુણાકાર શોધવો.

∴ $2 \rightarrow 1 \times 2$

⇨ આપેલ સંખ્યાના બે ક્રમિક અવયવો કે જેના ગુણાકાર સંખ્યા અને તફાવત 1 થાય.

⇨ રકમમાં સરવાળાની નિશાની (+) આપેલ હોય તો મોટી સંખ્યા જવાબ બનશે.

∴ $2 \rightarrow 1 \times 2 \rightarrow$ મોટી સંખ્યા જવાબ ગણાશે.

= 2

❖ $$\sqrt{2 - \sqrt{2 - \sqrt{2 - \sqrt{2 \ldots \infty}}}} = ?$$

⇨ જો ∞ આપેલ હોય ત્યારે ઉપયુક્ત ક્રમાનુસાર જ આપેલ સંખ્યાનો ક્રમિક ગુણાકાર શોધવો.

∴ $2 \rightarrow 1 \times 2$

⇨ જો રકમમાં બાદબાકીની (–) નિશાની આપેલ હોય તો નાની સંખ્યા જવાબ આવશે.

⇨ જેમ કે, $2 \rightarrow 1 \times 2$

↑

નાની સંખ્યા જવાબ મળે = 1

**(5)** $\sqrt{12 + \sqrt{12 + \sqrt{12 + \ldots\ldots \infty}}}$

(A) 4 (B) 3 (C) 2 (D) 12

**Solution :**

⇨ $\sqrt{12 + \sqrt{12 + \sqrt{12 + \ldots\ldots \infty}}}$

$3 \times 4$

⇨ સરવાળાની નિશાની હોવાથી મોટી સંખ્યા જવાબ મળે.

∴ (A) 4

---

**(6)** $\sqrt{30 - \sqrt{30 - \sqrt{30 \ldots\ldots \infty}}}$

(A) 5 (B) 6 (C) 7 (D) 30

**Solution :**

$\sqrt{30 - \sqrt{30 - \sqrt{30 \ldots\ldots \infty}}}$

$5 \times 6$

⇨ બાદબાકીની નિશાની હોવાથી જવાબ નાની સંખ્યા આવશે. તેથી જવાબ 5 આવે.

∴ (A) 5

---

## Type # 2

❑ **સમજૂતી :**

⇨ ચાર પગવાળા પ્રાણી = $\frac{\text{પગ}}{2}$ – માથા

⇨ બે પગવાળા પ્રાણી = કુલ માથા – ચાર પગવાળા પ્રાણી

---

**(7) વિરાટ પાસે કેટલાક સસલા અને પોપટ છે. જેમાં માથા 45 છે જ્યારે પગ 130 છે તો વિરાટ પાસે કુલ કેટલા પોપટ હશે ?**

(A) 35 (B) 15 (C) 25 (D) 30

**Solution :**

⇨ સસલા અને પોપટને માથુ એક હોય એટલે બંનેની સંખ્યા કુલ 45 છે

⇨ **રીત : 1**

∴ ચાર પગ $= \frac{\text{પગ}}{2}$ – માથા

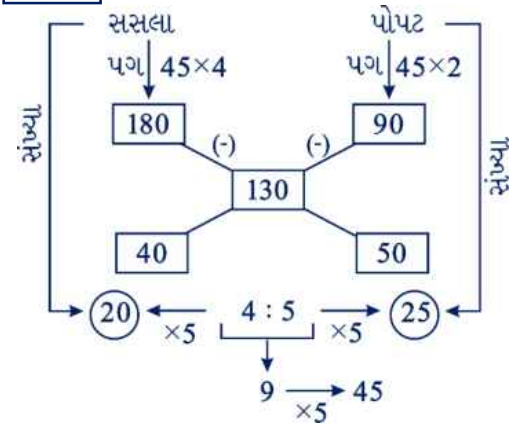
$= \frac{130}{2} - 45$

$= 65 - 45$

∴ ચાર પગ = 20 → સસલાની સંખ્યા મળી.

∴ બે પગ = 45 – 20 = 25 → પોપટની સંખ્યા.

⇨ **રીત : 2**




સસલા = 20, પોપટ = 25

∴ (C) 25

---

**(8) રોકી પાસે કેટલાક મોર અને હાથી છે. જો મોર અને હાથીનાં કુલ માથા 20 હોય અને કુલ પગ 56 હોય તો હાથીની સંખ્યા કેટલી ?**

(A) 12 (B) 6 (C) 7 (D) 8

**Solution :**

⇨ **રીત : 1**

∴ ચાર પગ $= \frac{\text{પગ}}{2} -$ માથા

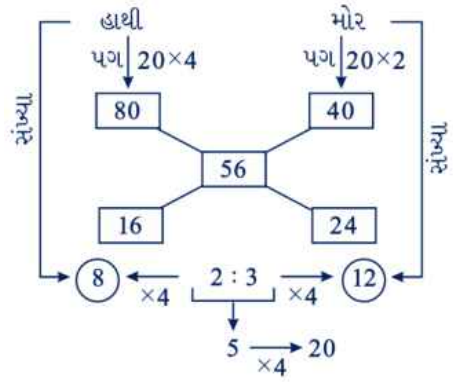
$= \frac{56}{2} - 20$

$= 28 - 20$

∴ ચાર પગ = 8 → હાથીની સંખ્યા

∴ બે પગ = 20 − 8 = 12 → મોરની સંખ્યા

⇨ **રીત : 2**




હાથી = 8, મોર = 12

∴ (D) 8

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**(9) પુષ્પા પાસે કેટલાક બતક અને ગાય છે. જો બતક અને ગાય ના કુલ માથા 30 અને કુલ પગ 90 હોય તો બતકની સંખ્યા કેટલી ?**

(A) 15 (B) 20 (C) 25 (D) 30

**Solution :**

⇨ **રીત : 1**

∴ ચાર પગ $= \frac{\text{પગ}}{2} -$ માથા

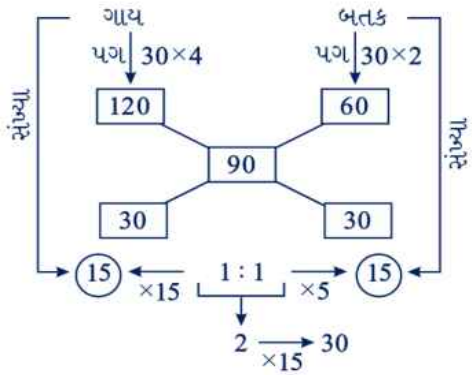
$= \frac{90}{2} - 30$

$= 45 - 30$

∴ ચાર પગ = 15 → ગાયની સંખ્યા

∴ બે પગ = 30 − 15 = 15 → બતકની સંખ્યા

⇨ **રીત : 2**




∴ ગાય = 15 ∴ બતક = 15

∴ (A) 15

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**(10) ડોનાલ્ડ ટ્રમ્પ પાસે કેટલીક મરઘી અને ભેંસ છે. મરઘી અને ભેંસના કુલ માથા 18 હોય અને પગ 48 હોય તો મરઘીની સંખ્યા કેટલી ?**

(A) 10 (B) 16 (C) 18 (D) 12

**Solution :**

⇨ **રીત : 1**

∴ ચાર પગ $= \frac{\text{પગ}}{2} -$ માથા

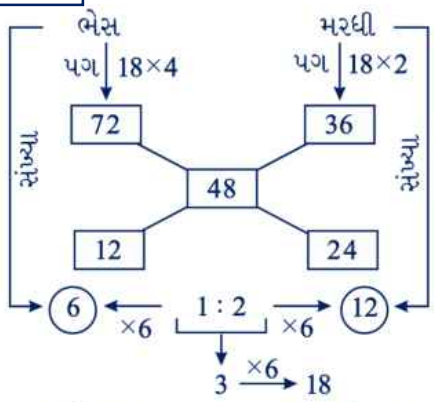
$= \frac{48}{2} - 18$

$= 24 - 18$

∴ ચાર પગ = 6 → ભેસની સંખ્યા

∴ બે પગ = 18 − 6 = 12 → મરઘીની સંખ્યા

⇨ **રીત : 2**




∴ ભેસ = 6 ∴ મરઘી = 12

∴ (D) 12

**(11) અનુષ્કા પાસે કેટલાક મોર અને કેટલાક બળદ છે જો મોર અને બળદના કુલ માથા 40 હોય અને કુલ પગ 114 હોય તો બળદની કુલ સંખ્યા કેટલી ?**

(A) 8 (B) 14 (C) 17 (D) 20

**Solution :**

⇨ **રીત : 1**

∴ ચાર પગ $= \frac{\text{પગ}}{2} -$ માથા

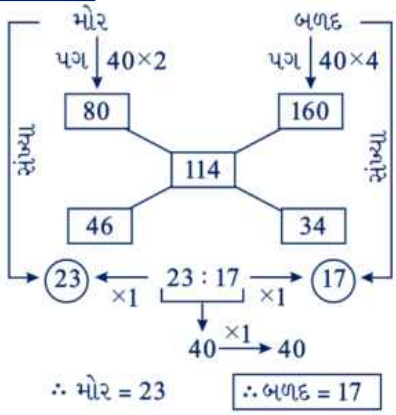
$= \frac{114}{2} - 40$

$= 57 - 40$

∴ ચાર પગ = 17 = બળદની સંખ્યા

∴ બે પગ = 40 − 17 = 23 મોરની સંખ્યા

⇨ **રીત : 2**




∴ મોર = 23 ∴ બળદ = 17

∴ (C) 17

## Type # 3

❑ **સમજૂતી :**

⇨ કુલ મેચ (ઘટના) $= \frac{n(n-1)}{2}$

**(12) બેડમિન્ટનની એક રમતમાં 5 ખેલાડી ભાગ લઈ રહ્યા છે. દરેક ખેલાડી અન્ય દરેક ખેલાડી સાથે એક મેચ રમે તો કુલ કેટલી મેચ રમવી પડે ?**

(A) 12 (B) 16 (C) 18 (D) 10

**Solution :**

⇨ n = 5

⇨ કુલ મેચ (ઘટના) $= \frac{n(n-1)}{2}$

$= \frac{5(5-1)}{2}$

$= \frac{5 \times 4}{2}$

$= \frac{\overset{10}{\cancel{20}}}{\cancel{2}}$

= 10

∴ (D) 10

**(13) એક લગ્ન સમારંભમાં 10 વ્યક્તિઓ ભેગા થાય છે. દરેક વ્યક્તિ અન્ય દરેક વ્યક્તિ સાથે હાથ મિલાવે તો હાથ મિલાવવાની કુલ સંખ્યા કેટલી ?**

(A) 30 (B) 45

(C) 25 (D) 40

**Solution :**

⇨ n = 10

⇨ હાથ મિલાવવાની કુલ સંખ્યા $= \frac{n(n-1)}{2}$

$= \frac{10(10-1)}{2}$

$= \frac{\overset{5}{\cancel{10}} \times 9}{\cancel{2}}$

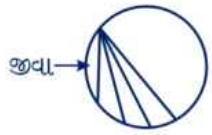
= 45

∴ (B) 45

**(14) વર્તુળના પરિઘ પર 12 બિંદુઓ આવેલા છે. દરેક બિંદુમાંથી અન્ય બિંદુમાથી અન્ય બિંદુ તરફ જીવા દોરવામાં આવે તો જીવાની કુલ સંખ્યા શોધો ?**

(A) 66 (B) 36 (C) 46 (D) 52

**Solution :**




⇨ જીવાની સંખ્યા $= \frac{n(n-1)}{2}$

$= \frac{\overset{6}{\cancel{12}}(12-1)}{2}$

$= 6 \times 11$

= 66

∴ (A) 66

**(15) બેડમિન્ટનની એક રમતમાં કુલ 28 મેચ રમવી પડે છે. તો દરેક ખેલાડી અન્ય ખેલાડી સાથે મેચ રમે તો કુલ કેટલા ખેલાડીઓએ રમતમાં ભાગ લીધો હશે ?**

(A) 5 (B) 7 (C) 8 (D) 6

**Solution :**

⇨ કુલ મેચ (ઘટના) $= \frac{n(n-1)}{2}$

$28 = \frac{n(n-1)}{2}$

$28 \times 2 = n(n-1)$

$56 = n(n-1)$

⇨ (∵ n (n – 1) એ ક્રમિક સંખ્યા છે.)

એટલે, 56 ની ક્રમિક સંખ્યા = 8 × 7 = 56

નો ગુણાકાર ↓ ↓

= n ( n – 1) થાય

∴ 56 = 8 × 7

∴ n = 8

∴ (C) 8

---

**(16) બેડમિન્ટનની એક રમતમાં કુલ 21 મેચ રમવી પડે છે. દરેક અન્ય ખેલાડી સાથે એક મેચ રમે તો કુલ કેટલા ખેલાડીઓએ રમતમાં ભાગ લીધો હશે ?**

(A) 6 (B) 7 (C) 9 (D) 8

**Solution :**

⇨ કુલ મેચ (ઘટના) = $\frac{n(n-1)}{2}$

$21 = \frac{n(n-1)}{2}$

21 × 2 = n (n – 1)

42 = 7 × 6 (ક્રમિક સંખ્યાનો ગુણાકાર)

[∴ n(n – 1) એ ક્રમિક સંખ્યા છે.]

n = 7

∴ (B) 7

---

## Type # 4

❑ **સમજૂતી :**

⇨ ભેટની (Gift) સંખ્યા = n(n – 1)

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**(17) 9 વ્યક્તિઓ એક મિટિંગમાં મળે છે. દરેક વ્યક્તિ એકબીજાને ભેટ આપે છે તો ભેટની સંખ્યા શોધો.**

(A) 72 (B) 36 (C) 48 (D) 38

**Solution :**

⇨ ભેટની સંખ્યા = n(n – 1) = 9 × (9 – 1)

= 9 × 8

= 72

∴ (A) 72

---

**(18) 11 વ્યક્તિઓ એક મિટિંગમાં મળે છે. દરેક વ્યક્તિ એકબીજાને ભેટ આપે છે તો ભેટ સંખ્યા શોધો.**

(A) 110 (B) 90 (C) 54 (D) 55

**Solution :**

⇨ ભેટની સંખ્યા = n(n – 1) = 11 × (11 – 1)

= 11 × 10

= 110

∴ (A) 110

---

**(19) 4 વ્યક્તિઓ એક મિટિંગમાં મળે છે. દરેક વ્યક્તિ એકબીજાને ભેટ આપે છે તો ભેટની સંખ્યા શોધો.**

(A) 16 (B) 12 (C) 6 (D) 24

**Solution :**

⇨ ભેટની સંખ્યા = n(n – 1) = 4 × (4 – 1)

= 4 × 3

= 12

∴ (B) 12

---

**(20) 6 વ્યક્તિઓ એક મિટિંગમાં મળે છે. દરેક વ્યક્તિ એકબીજાને ભેટ આપે છે તો ભેટની સંખ્યા શોધો.**

(A) 10 (B) 40 (C) 30 (D) 20

**Solution :**

⇨ ભેટની સંખ્યા = n(n – 1) = 6 × (6 – 1)

= 6 × 5

= 30

∴ (C) 30

---

**(21) એક મિટિંગમાં અમુક વ્યક્તિઓ મળે છે. દરેક વ્યક્તિ એકબીજાને ભેટ આપે છે જો ભેટની કુલ સંખ્યા 56 હોય તો વ્યક્તિઓની સંખ્યા શોધો.**

(A) 6 (B) 7 (C) 9 (D) 8

**Solution :**

⇨ કુલ ભેટ = n (n – 1)

56 = n (n – 1) (અહીં બંને ક્રમિક સંખ્યા છે.)

56 = 8 × 7 (ક્રમિક સંખ્યાનો ગુણાકાર છે.)

n = 8

∴ (D) 8

---

## Type # 5

❑ **સમજૂતી :**

⇨ જ્યારે મેચ નોક આઉટ રમાવાની હોય (એટલે કે હારે તે ઘરે) ત્યારે . . . . .

⇨ Ex. 8 ટીમ

4 v/s 4 → 4

2 v/s 2 → 2

1 v/s 1 → 1 ← ફાઇનલ મેચ

7 ← કુલ મેચ

⇨ કુલ મેચ = n – 1

= 8 – 1

= 7

**(22) 32 ટીમને બે ભાગમાં વહેંચી નોક આઉટ પદ્ધતિથી મેચ રમાડવામાં આવે તો ફાઈનલ વિજેતા નક્કી માટે કુલ કેટલી મેચ રમાડવી પડે ?**

(A) 31 (B) 24
(C) 37 (D) 27

**Solution :**

⇨ કુલ મેચ $= n - 1$
$= 32 - 1$
$= 31$

$\therefore$ (A) 31

---

**(23) 16 ટીમને બે ભાગમાં વહેંચી નોક આઉટ પદ્ધતિથી મેચ રમાડવામાં આવે તો ફાઈનલ વિજેતા નક્કી માટે કુલ કેટલી મેચ રમાડવી પડે ?**

(A) 17 (B) 21
(C) 15 (D) 24

**Solution :**

⇨ કુલ મેચ $= n - 1$
$= 16 - 1$
$= 15$

$\therefore$ (C) 15

---

**(24) 64 ટીમને બે ભાગમાં વહેંચી નોક આઉટ પદ્ધતિથી મેચ રમાડવામાં આવે તો ફાઈનલ વિજેતા નક્કી માટે કુલ કેટલી મેચ રમાડવી પડે ?**

(A) 53 (B) 84
(C) 73 (D) 63

**Solution :**

⇨ કુલ મેચ $= n - 1$
$= 64 - 1$
$= 63$

$\therefore$ (D) 63

---

**(25) 22 ટીમને બે ભાગમાં વહેંચી નોક આઉટ પદ્ધતિથી મેચ રમાડવામાં આવે તો ફાઈનલ વિજેતા નક્કી માટે કુલ કેટલી મેચ રમાડવી પડે ?**

(A) 19 (B) 21 (C) 17 (D) 23

**Solution :**

⇨ કુલ મેચ $= n - 1$
$= 22 - 1$
$= 21$

$\therefore$ (B) 21

**(26) અમુક ટીમને બે ભાગમાં વહેંચી નોક આઉટ પદ્ધતિથી મેચ રમાડવામાં આવે તો ફાઈનલ વિજેતા નક્કી માટે કુલ 7 મેચ રમાડવી પડે છે તો ટીમની સંખ્યા શોધો.**

(A) 6 (B) 7 (C) 9 (D) 8

**Solution :**

⇨ કુલ મેચ $= n - 1$
$\therefore 7 = n - 1$
$\therefore n = 7 + 1$
$\therefore n = 8$

$\therefore$ (D) 8

---

## Type # 6

❑ **સમજૂતી :**

$\therefore 10 \div 10 \div 10 \div 10 \div 10$

$= \cancel{10} \times \frac{1}{\cancel{10}} \times \frac{1}{10} \times \frac{1}{10} \times \frac{1}{10}$

[$\therefore$ ભાગાકારનો ગુણાકાર કરવો પછીની સંખ્યાનો વ્યસ્ત લેવો.]

$= \frac{1}{10 \times 10 \times 10}$

$= \frac{1}{1000}$

$= 0.001$

$= \frac{1}{10^3}$

$= 10^{-3}$

[જ્યારે માત્ર ભાગાકાર આપેલ હોય ત્યારે ભાગાકાર હંમેશા ડાબી બાજુથી જ કરવો.]

❑ **યાદ રાખો :**

⇨ 1 થી 16 ના ઘન

| | | |
|---|---|---|
| $1^3 \rightarrow 1$ | $6^3 \rightarrow 216$ | $11^3 \rightarrow 1331$ |
| $2^3 \rightarrow 8$ | $7^3 \rightarrow 343$ | $12^3 \rightarrow 1728$ |
| $3^3 \rightarrow 27$ | $8^3 \rightarrow 512$ | $13^3 \rightarrow 2197$ |
| $4^3 \rightarrow 64$ | $9^3 \rightarrow 729$ | $14^3 \rightarrow 2744$ |
| $5^3 \rightarrow 125$ | $10^3 \rightarrow 1000$ | $15^3 \rightarrow 3375$ |
| | | $16^3 \rightarrow 4096$ |

---

**(27) સાદુંરૂપ આપો : $\frac{1}{12} \div \frac{1}{12} \div \frac{1}{12} \div \frac{1}{12} \div \frac{1}{12}$**

(A) 1287 (B) 1278
(C) 1728 (D) 1782

**Solution :**

⇨ $\frac{1}{\cancel{12}} \times \cancel{12} \times 12 \times 12 \times 12 = 12^3 = 1728$

$\therefore$ (C) 1728

**(28) સાદુંરૂપ આપો :** $\frac{1}{13} \div \frac{1}{13} \div \frac{1}{13} \div \frac{1}{13} \div \frac{1}{13}$

(A) 2197 (B) 1444 (C) 1331 (D) 2917

**Solution :**

⇨ $\frac{1}{\cancel{13}} \times \cancel{13} \times 13 \times 13 \times 13 = 13^3 = 2197$

$\boxed{\therefore \text{ (A) } 2197}$

---

**(29) સાદુંરૂપ આપો :** $\frac{1}{10} \div \frac{1}{10} \div \frac{1}{10} \div \frac{1}{10} \div \frac{1}{10}$

(A) 800 (B) 1000 (C) 1200 (D) 900

**Solution :**

⇨ $\frac{1}{\cancel{10}} \times \cancel{10} \times 10 \times 10 \times 10 = 10^3 = 1000$

$\boxed{\therefore \text{ (B) } 1000}$

---

**(30) સાદુંરૂપ આપો :** $\frac{1}{8} \div \frac{1}{8} \div \frac{1}{8} \div \frac{1}{8} \div \frac{1}{8}$

(A) 1 (B) 8 (C) 64 (D) 512

**Solution :**

⇨ $\frac{1}{\cancel{8}} \times \cancel{8} \times 8 \times 8 \times 8 = 8^3 = 512$

$\boxed{\therefore \text{ (D) } 512}$

---

**(31) સાદુંરૂપ આપો :** $\frac{1}{5} \div \frac{1}{5} \div \frac{1}{5} \div \frac{1}{5} \div \frac{1}{5}$

(A) 5 (B) 25 (C) 125 (D) 1

**Solution :**

⇨ $\frac{1}{\cancel{5}} \times \cancel{5} \times 5 \times 5 \times 5 = 5^3 = 125$

$\boxed{\therefore \text{ (C) } 125}$

---

## Type # 7

❑ **સમજૂતી :**

⇨ $(a + b)^2 = (a + b)(a + b) = a^2 + 2ab + b^2$

⇨ $(a - b)^2 = (a - b)(a - b) = a^2 - 2ab + b^2$

⇨ $a^2 - b^2 = (a + b)(a - b)$

⇨ $a^3 + b^3 = (a + b)(a^2 - ab + b^2)$

$= (a + b)^3 - 3ab\,(a + b)$

⇨ $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$

$= (a - b)^3 + 3ab\,(a - b)$

⇨ $\frac{a^3 + b^3}{a^2 - ab - b^2} = \boxed{a + b}$

⇨ $\frac{a^3 - b^3}{a^2 + ab + b^2} = \frac{(a-b)\cancel{(a^2+ab+b^2)}}{\cancel{(a^2+ab+b^2)}} = \boxed{a - b}$

⇨ $\frac{a^2 - b^2}{a + b} = \frac{\cancel{(a+b)}(a-b)}{\cancel{(a+b)}} = \boxed{a - b}$

⇨ $\frac{a^2 - b^2}{a - b} = \frac{(a+b)\cancel{(a-b)}}{\cancel{(a-b)}} = \boxed{a + b}$

⇨ $(a + b)^2 + (a - b)^2$

$= a^2 + \cancel{2ab} + b^2 + a^2 - \cancel{2ab} + b^2$

$= 2a^2 + 2b^2$

$\boxed{= 2(a^2 + b^2)}$

⇨ $\frac{(a+b)^2 + (a-b)^2}{a^2 + b^2} = \frac{2\cancel{(a^2+b^2)}}{\cancel{a^2+b^2}} = \boxed{2}$

⇨ $(a + b)^2 - (a - b)^2$

$= \cancel{a^2} + 2ab + \cancel{b^2} - \cancel{a^2} + 2ab - \cancel{b^2}$

$= \boxed{4ab}$

⇨ $\frac{(a+b)^2 - (a-b)^2}{ab} = \frac{4ab}{ab} = \boxed{4}$

---

**(32) સાદુંરૂપ આપો :** $\frac{5.2 \times 5.2 - 2.7 \times 2.7}{7.9 \times 2.5}$

(A) 1.3 (B) 1 (C) 1.9 (D) 0.3

**Solution :**

⇨ $a = 5.2,\ b = 2.7$

⇨ $a + b = 5.2 + 2.7 = 7.9$

$a - b = 5.2 - 2.7 = 2.5$

⇨ $a \times a = a^2$

$a + a = 2a$

$\therefore \frac{a^2 - b^2}{(a+b)(a-b)} = \frac{(a+b)\cancel{(a-b)}}{\cancel{(a+b)}(a-b)} = 1$

$\boxed{\therefore \text{ (B) } 1}$

---

**(33) સાદુંરૂપ આપો :** $\frac{5.2 \times 5.2 - 2.7 \times 2.7}{7.9}$

(A) 2.5 (B) 1 (C) 1.9 (D) 0.3

**Solution :**

⇨ $a = 5.2,\ b = 2.7$

⇨ $a + b = 5.2 + 2.7 = 7.9$

$\therefore \frac{a^2 - b^2}{a + b} = \frac{\cancel{(a+b)}(a-b)}{\cancel{(a+b)}} = a - b$

$\therefore a - b = 5.2 - 2.7$

$= 2.5$

$\boxed{\therefore \text{ (A) } 2.5}$

**(34)** $\dfrac{7.35\times7.35-2.25\times2.25}{0.24}$

(A) 204 (B) 320 (C) 225 (D) 304

**Solution :**

⇨ a = 7.35 b = 2.25

$\therefore \dfrac{\overset{a}{7.35}\times\overset{a}{7.35}-\overset{b}{2.25}\times\overset{b}{2.25}}{0.24}=\dfrac{a^2-b^2}{0.24}$

$\therefore \dfrac{(a+b)(a-b)}{0.24}$

$=\dfrac{(7.35+2.25)(7.35-2.25)}{0.24}$

$=\dfrac{9.6\times5.1}{0.24}$

$=\dfrac{\overset{4}{\cancel{96}}\times51\times1\cancel{0}\,\cancel{0}}{1\cancel{0}\times1\cancel{0}\times\cancel{24}}$

= 204

$\boxed{\therefore \text{(A) } 204}$

---

**(35)** $\dfrac{(379+276)^2+(379-276)^2}{379\times379+276\times276}$

(A) 2 (B) 655 (C) 103 (D) 1

**Solution :**

⇨ a = 379 b = 276

$\therefore \dfrac{(379+276)^2+(379-276)^2}{379\times379+276\times276}$

$=\dfrac{(a+b)^2+(a-b)^2}{a^2+b^2}$

$=\dfrac{2\cancel{(a^2+b^2)}}{\cancel{(a^2+b^2)}}$

= 2

$\boxed{\therefore \text{(A) } 2}$

---

**(36)** સાદુંરૂપ આપો : $\dfrac{(326+222)^2-(326-222)^2}{(326\times222)}$

(A) 1 (B) 4 (C) 3 (D) 2

**Solution :**

⇨ a = 326 b = 222

$\therefore \dfrac{(326+222)^2-(326-222)^2}{(326\times222)}$

$=\dfrac{(a+b)^2-(a-b)^2}{(a\times b)}$

$=\dfrac{4ab}{ab}$

= 4

$\boxed{\therefore \text{(B) } 4}$

**(37)** $\dfrac{(589+187)^2-(589-187)^2}{589\times187}$

(A) 4 (B) 766 (C) 402 (D) $\dfrac{201}{388}$

**Solution :**

⇨ a = 589 b = 187

$=\dfrac{(589+187)^2-(589-187)^2}{(589\times187)}$

$=\dfrac{(a+b)^2-(a-b)^2}{a\times b}$

$=\dfrac{4ab}{ab}$

= 4

$\boxed{\therefore \text{(A) } 4}$

---

**(38)** સાદુંરૂપ આપો : $\dfrac{2.31\times2.31+2\times2.31\times1.69+1.69\times1.69}{2.31+1.69}$

(A) 3 (B) 4 (C) 2 (D) 5

**Solution :**

⇨ a = 2.31 b = 1.69

$\therefore \dfrac{2.31\times2.31+2\times2.31\times1.69+1.69\times1.69}{2.31+1.69}$

$=\dfrac{a^2+2ab+b^2}{a+b}$

$=\dfrac{(a+b)^2}{(a+b)}$

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

$=a+b$

$=2.31+1.69$

$=4$

$\boxed{\therefore \text{(B) } 4}$

---

**(39)** સાદુંરૂપ આપો : $\dfrac{0.2\times0.2\times0.2+0.5\times0.5\times0.5}{0.02\times0.02\times0.02+0.05\times0.05\times0.05}$

(A) 5000 (B) 10000

(C) 100 (D) 1000

**Solution :**

$\therefore \dfrac{\overbrace{0.2\times0.2\times0.2}^{3\text{ દશાંશ}}+\overbrace{0.5\times0.5\times0.5}^{3\text{ દશાંશ}}}{\underbrace{0.02\times0.02\times0.02}_{6\text{ દશાંશ}}+\underbrace{0.05\times0.05\times0.05}_{6\text{ દશાંશ}}}$

$=\dfrac{\cancel{3}+\cancel{3}\text{ દશાંશ}}{\underset{3}{\cancel{6}}+\underset{3}{\cancel{6}}\text{ દશાંશ વધે}}$

$= \frac{}{\frac{1}{1000}}$

[જેટલા દશાંશ અંતે વધે તે અંશમાં જતા જવાબ બનશે.]

$\therefore$ (D) 1000

**(40)** $\frac{(0.0002)^2+(0.0033)^2+(0.0444)^2}{(0.00002)^2+(0.00033)^2+(0.00444)^2} = ?$

(A) 100 (B) 80 (C) 90 (D) 110

**Solution :**

$$\therefore \frac{\overbrace{(0.0002)^2}^{4} + \overbrace{(0.0033)^2}^{4} + \overbrace{(0.0444)^2}^{4}}{\underbrace{(0.00002)^2}_{5} + \underbrace{(0.00033)^2}_{5} + \underbrace{(0.00444)^2}_{5}}$$

[જ્યારે દશાંશનો વર્ગ કરવામાં આવે ત્યારે દશાંશ બે ગણા થાય.]

$\therefore \frac{\cancel{8}}{\cancel{10}}$ 2 વધ્યા એટલે $\frac{1}{\frac{1}{100}} = 100$

$\therefore$ (A) 100

## Type # 8

❑ **યાદ રાખો :**

⇨ 1 થી 30 ના વર્ગ

| | | |
|---|---|---|
| $1^2 \to 1$ | $11^2 \to 121$ | $21^2 \to 441$ |
| $2^2 \to 4$ | $12^2 \to 144$ | $22^2 \to 484$ |
| $3^2 \to 9$ | $13^2 \to 169$ | $23^2 \to 529$ |
| $4^2 \to 16$ | $14^2 \to 196$ | $24^2 \to 576$ |
| $5^2 \to 25$ | $15^2 \to 225$ | $25^2 \to 625$ |
| $6^2 \to 36$ | $16^2 \to 256$ | $26^2 \to 676$ |
| $7^2 \to 49$ | $17^2 \to 289$ | $27^2 \to 729$ |
| $8^2 \to 64$ | $18^2 \to 324$ | $28^2 \to 784$ |
| $9^2 \to 81$ | $19^2 \to 361$ | $29^2 \to 841$ |
| $10^2 \to 100$ | $20^2 \to 400$ | $30^2 \to 900$ |

**(41)** $x$ ની કિંમત શોધો.

$\sqrt{(189-x)} = \sqrt{(178-\sqrt{81})}$

(A) 20 (B) 27 (C) 38 (D) 49

**Solution :**

⇨ $\sqrt{(189-x)} = \sqrt{(178-\sqrt{81})}$

[બંને બાજુ વર્ગ કરતા વર્ગમૂળની નિશાની નીકળી જાય.]

$189 - x = 178 - \sqrt{81}$

$189 - x = 178 - 9$

$189 - x = 169$

$x = 189 - 169$

$x = 20$

$\therefore$ (A) 20

**(42)** $x$ ની કિંમત શોધો :

$\sqrt{(157-x)} = \sqrt{(155-\sqrt{121})}$

(A) 13 (B) 16 (C) 17 (D) 14

**Solution :**

$\therefore 157 - x = 155 - \sqrt{121}$

$157 - x = 155 - 11$

$157 - x = 144$

$x = 157 - 144$

$x = 13$

$\therefore$ (A) 13

**(43)** $x$ ની કિંમત શોધો :

$\sqrt{(430-x)} = \sqrt{(86-\sqrt{25})}$

(A) 729 (B) 372 (C) 298 (D) 349

**Solution :**

⇨ $430 - x = 86 - \sqrt{25}$

$430 - x = 86 - 5$

$430 - x = 81$

$x = 430 - 81$

$x = 349$

$\therefore$ (D) 349

**(44)** $x$ ની કિંમત શોધો :

$\sqrt{441} \div 21 + \sqrt{484} = 1 \times x$

(A) 26 (B) 25 (C) 23 (D) 24

**Solution :**

⇨ $\sqrt{441} = 21$

⇨ $\sqrt{484} = 22$

⇨ $\frac{\cancel{21}}{\cancel{21}} + 22 = x$

$1 + 22 = x$

$x = 23$

$\therefore$ (C) 23

**(45) $x$ ની કિંમત શોધો :**

$$\sqrt{(140-x)} = \sqrt{(12+\sqrt{169})}$$

(A) 245 (B) 425 (C) 115 (D) 135

**Solution :**

⇨ $140 - x = 12 + \sqrt{169}$

$140 - x = 12 + 13$

$140 - x = 25$

$140 - 25 = x$

$x = 115$

$\therefore$ (C) 115

---

**(46) $x$ ની કિંમત શોધો :**

$$\sqrt{(555-x)} = \sqrt{(38-\sqrt{169})}$$

(A) 530 (B) 756 (C) 625 (D) 621

**Solution :**

⇨ $555 - x = 38 - \sqrt{169}$

$555 - x = 38 - 13$

$555 - x = 25$

$x = 555 - 25$

$x = 530$

$\therefore$ (A) 530

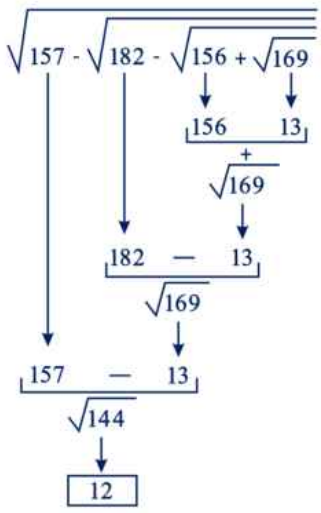
---

**(47) સાદુંરૂપ આપો :**

$$\sqrt{157-\sqrt{182-\sqrt{156+\sqrt{169}}}}$$

(A) 11 (B) 12 (C) 14 (D) 13

**Solution :**




$\therefore$ (B) 12

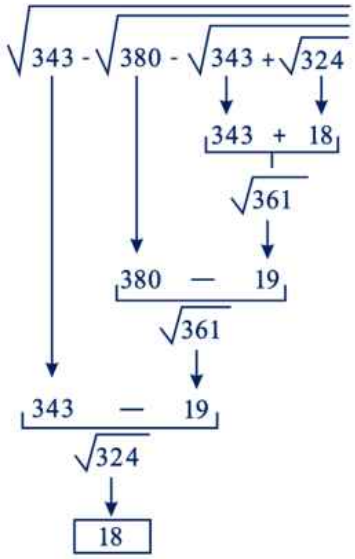
**(48) સાદુંરૂપ આપો :**

$$\sqrt{343-\sqrt{380-\sqrt{(343+\sqrt{324})}}}$$

(A) 12 (B) 21

(C) 38 (D) 18

**Solution :**




$\therefore$ (D) 18

---

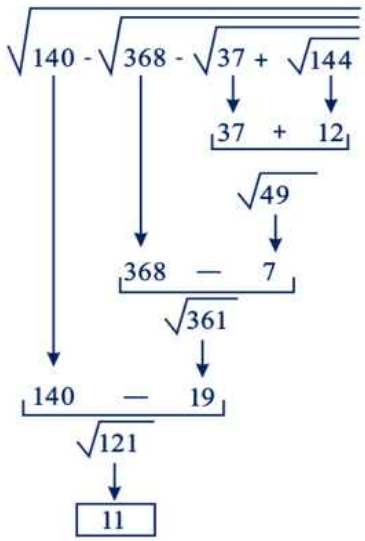
**(49) સાદુંરૂપ આપો :**

$$\sqrt{140-\sqrt{368-\sqrt{37+\sqrt{144}}}}$$

(A) 13 (B) 14

(C) 11 (D) 12

**Solution :**




$\therefore$ (C) 11

**(50) સાદુંરૂપ આપો :**

$$\sqrt{159 - \sqrt{244 - \sqrt{(375 - \sqrt{196})}}}$$

(A) 14 (B) 16 (C) 13 (D) 12

**Solution :**

$$\sqrt{159 - \sqrt{244 - \sqrt{375 - \sqrt{196}}}}$$

$375 - 14$

$\sqrt{361}$

$244 - 19$

$\sqrt{225}$

$159 - 15$

$\sqrt{144}$

$\boxed{12}$

$\therefore$ (D) 12

---

**(51) સાદુંરૂપ આપો :**

$$\sqrt{694 - \sqrt{337 - \sqrt{(191 - \sqrt{484})}}}$$

(A) 29 (B) 25

(C) 24 (D) 26

**Solution :**

$$\sqrt{694 - \sqrt{337 - \sqrt{(191 - \sqrt{484})}}}$$

$191 - 22$

$\sqrt{169}$

$337 - 13$

$\sqrt{324}$

$694 - 18$

$\sqrt{676}$

$\boxed{26}$

$\therefore$ (D) 26

**(52)** $\sqrt{3 + \sqrt{27 + \sqrt{(73 + \sqrt{64})}}} = ?$

(A) 1 (B) 2 (C) 3 (D) 4

**Solution :**

$$\sqrt{3 + \sqrt{27 + \sqrt{(73 + \sqrt{64})}}}$$

$73 + 8$

$\sqrt{81}$

$27 + 9$

$\sqrt{36}$

$3 + 6$

$\sqrt{9}$

$\boxed{3}$

$\therefore$ (C) 3

---

**(53) $x$ ની કિંમત શોધો :**

$\sqrt{169} + 13 + \sqrt{196} - 1 = 3 \times x$

(A) 2 (B) 13 (C) 4 (D) 5

**Solution :**

⇨ $\sqrt{169} = 13$

⇨ $\sqrt{196} = 14$

$\therefore 13 + 13 + 14 - 1 = 3x$

$\therefore \cancel{3} \times 13 = \cancel{3}x$

$\therefore x = 13$

$\therefore$ (B) 13

---

**(54) $x$ ની કિંમત શોધો :**

$\sqrt{361} + 19 + \sqrt{400} - 1 = 3 \times x$

(A) 24 (B) 22 (C) 19 (D) 21

**Solution :**

⇨ $\sqrt{361} = 19$

⇨ $\sqrt{400} = 20$

$\therefore 19 + 19 + 20 - 1 = 3 \times x$

$\therefore 3\,(19) = 3(x)$

$\therefore x = 19$

$\therefore$ (C) 19

**(55) $x$ ની કિંમત શોધો :**

$\sqrt{121} \div 11 + \sqrt{144} = 1 \times x$

(A) 16 (B) 14 (C) 13 (D) 15

**Solution :**

$\therefore \frac{\cancel{11}}{\cancel{11}} + 12 = x$

$\therefore 1 + 12 = x$

$\therefore x = 13$

$\therefore$ (C) 13

---

**(56) $x$ ની કિંમત શોધો :**

$\sqrt{361} \div 19 + \sqrt{400} = 1 \times x$

(A) 24 (B) 22 (C) 23 (D) 21

**Solution :**

$\therefore \frac{\cancel{19}}{\cancel{19}} + 20 = x$

$\therefore 1 + 20 = x$

$\therefore x = 21$

$\therefore$ (D) 21

---

## Type # 9

❑ **યાદ રાખો :**

⇨ જો એકમના અંક તરીકે 0, 1, 4, 5, 6, 9 હોય તો તેનો ઘન કરો તો તેની તે જ સંખ્યા આવે.

⇨ ઘનમૂળ કાઢો તો પણ તે જ સંખ્યા મળે.

1 → 1

2 → 8 $\quad 2 \rightleftharpoons 8$

3 → 27 $\quad 3 \rightleftharpoons 7$

4 → 64

5 → 125

6 → 216

7 → 343

8 → 512

9 → 729

10 → 1000

**(57) $x$ ની કિંમત શોધો : $x^3 \div 11 = 968$**

(A) 24 (B) 20 (C) 26 (D) 22

**Solution :**

$\therefore \frac{x^3}{11} = 968$

$\therefore x^3 = \underline{968 \times 11}$

ગુણાકાર $8 \times 1 = 8$ ઘનમૂળ → 2

$\therefore x = 2\underline{2}$

$\therefore$ (D) 22

---

**(58) $x$ ની કિંમત શોધો : $x^3 \div 29 = 841$**

(A) 29 (B) 31 (C) 30 (D) 28

**Solution :**

$\therefore \frac{x^3}{29} = 841$

$\therefore x^3 = \underline{841 \times 29}$

ગુણાકાર $9 \times 1 = 9$ ઘનમૂળ → 9

$\therefore x = 2\underline{9}$

$\therefore$ (A) 29

---

**(59) $x$ ની કિંમત શોધો : $x^3 \div 14 = 1568$**

(A) 28 (B) 30 (C) 32 (D) 26

**Solution :**

$\therefore x^3 = 1568 \times 14$ $\quad 8 \times 4$

$\boxed{3\underline{2}} \rightarrow 8$

$\therefore$ (A) 28

---

❑ **સમજૂતી :**

⇨ આધાર સરખા વચ્ચે ગુણાકારની નિશાની તો ઘાતનો સરવાળો

$\therefore a^3 \times a^2 = a^{3+2} = a^5 \times \rightarrow +$

⇨ આધાર સરખા વચ્ચે ભાગાકારની નિશાની તો ઘાતનો બાદબાકી

$\therefore a^5 \div a^3 = a^{5-3} = a^2 \qquad \div \rightarrow -$

⇨ ઘાતની ઘાતનો ગુણાકાર

$\therefore (a^2)^3 = a^{2\times3} = a^6$

⇨ કોંસ વગરની ઘાત હોય તો ઘાતની ઘાત કરવી.

$\therefore a^{2^3} = (2 \times 2 \times 2)$

$= 8$

$= a^8$

**(60) સાદુંરૂપ આપો : $324^2 \times 72 \div 18^5 \times 1021$**

(A) 4054 (B) 4064

(C) 4074 (D) 4084

**Solution :**

$\therefore 324^2 \times 72 \div 18^5 \times 1021$

$= \frac{(18^2)^2 \times 18^1 \times 4}{18^5} \times 1021$

$= \frac{18^4 \times 18^1 \times 4}{18^5} \times 1021$

$= \frac{\cancel{18^5} \times 4}{\cancel{18^5}} \times 1021$

$= 4 \times 1021$

$= 4084$

$\therefore$ (D) 4084

---

**(61) સાદુંરૂપ આપો : $(7^4)^2 \times \frac{1}{343^2} \times 7 + 17 = ?$**

(A) 360 (B) 380

(C) 340 (D) 320

**Solution :**

$\therefore (7^4)^2 \times \frac{1}{343^2} \times 7 + 17 = ?$

$= 7^8 \times \frac{1}{(7^3)^2} \times 7^1 + 17$

$= \frac{7^9 \times 1}{7^6} + 17$

$= 7^{9-6} + 17$

$= 7^3 + 17$

$= 343 + 17$

$= 360$

$\therefore$ (A) 360

---

**(62) સાદુંરૂપ આપોઃ $289^2 \times 68 \div 17^5 \times 1021$**

(A) 4074 (B) 4064

(C) 4054 (D) 4084

**Solution :**

$\therefore \frac{(17^2)^2 \times 17 \times 4}{17^5} \times 1021$

$= \frac{\cancel{17^5} \times 4 \times 1021}{\cancel{17^5}}$

$= 4084$

$\therefore$ (D) 4084

**(63) સાદુંરૂપ આપો : $\left((4^4)^2 \times \frac{1}{64^2}\right)^2 + 10$**

(A) 344 (B) 244

(C) 366 (D) 266

**Solution :**

$\therefore \left((4^4)^2 \times \frac{1}{64^2}\right)^2 + 10$

$= \left(4^8 \times \frac{1}{(4^3)^2}\right)^2 + 10$

$= \left(4^8 \times \frac{1}{4^6}\right)^2 + 10$

$= (4^{8-6})^2 + 10$

$= (4^2)^2 + 10$

$= 16^2 + 10$

$= 256 + 10$

$= 266$

$\therefore$ (D) 266

---

**(64) સાદુંરૂપ આપો : $5 \div 5^{-2} + \sqrt{25} - \sqrt{121}$**

(A) 143 (B) 132

(C) 121 (D) 119

**Solution :**

$\therefore 5 \div 5^{-2} + \sqrt{25} - \sqrt{121}$

$a^2 = \frac{1}{a^{-2}}$

$\frac{1}{5^{-2}} = 5^2$ થાય

$= 5 \times \frac{1}{5^{-2}} + 5 - 11$

$= 5 \times 5^2 + 5 - 11$

$= 125 + 5 - 11$

$= 130 - 11$

$= 119$

$\therefore$ (D) 119

---

**(65) $\left((6^4)^2 \times \frac{1}{216^2}\right) \times 6 + 16 = ?$**

(A) 224 (B) 242

(C) 216 (D) 232

**Solution :**

$\therefore \left((6^4)^2 \times \frac{1}{216^2}\right) \times 6 + 16 = ?$

$= \left(6^8 \times \frac{1}{(6^3)^2}\right) \times 6^1 + 16$

$= \frac{6^9}{6^6} + 16$

$= 6^{9-6} + 16$

$= 6^3 + 16$

$= 216 + 16$

$= 232$

$\therefore$ (D) 232

**(66) સાદુંરૂપ આપો : $6 \div 6^{-2} + \sqrt{36} - \sqrt{144}$**

(A) 240 (B) 230

(C) 220 (D) 210

**Solution :**

$= 6 \div 6^{-2} + \sqrt{36} - \sqrt{144}$

$= 6 \times \frac{1}{6^{-2}} + 6 - 12$

$= 6 \times 6^2 + 6 - 12$

$= 6^3 - 6$

$= 216 - 6$

$= 210$

$\therefore$ (D) 210

---

**(67) સાદુંરૂપ આપો : $(8^4)^2 \times \frac{1}{512^2} \times 8 + 18 = ?$**

(A) 490 (B) 530

(C) 510 (D) 550

**Solution :**

$\therefore (8^4)^2 \times \frac{1}{512^2} \times 8 + 18 = ?$

$= 8^8 \times \frac{1}{8^6} \times 8^1 + 18$

$= \frac{8^9}{8^6} + 18$

$= 8^{9-6} + 18$

$= 512 + 18$

$= 530$

$\therefore$ (B) 530

---

**(68) સાદુંરૂપ આપો : $169^2 \times 52 \div 13^5 \times 1020$**

(A) 4050 (B) 4060

(C) 4070 (D) 4080

**Solution :**

$= \frac{(13^2)^2 \times 13 \times 4}{13^5} \times 1020$

$= \frac{13^5}{13^5} \times 4 \times 1020$

$= 4080$

$\therefore$ (D) 4080

## Type # 10

**(69) સાદુંરૂપ આપો : $\frac{23 \times 552 \div 24 + 23}{552 \div 23 - 1} = ?$**

(A) 25 (B) 23 (C) 26 (D) 24

**Solution :**

$= \frac{23 \times \frac{552}{24} + 23}{\frac{552}{23} - 1}$

$= \frac{23 \times 23 + 23}{24 - 1}$

$= \frac{23 \times 23}{23} + \frac{23}{23}$

$= 23 + 1$

$= 24$

$\therefore$ (D) 24

---

**(70) સાદુંરૂપ આપો : $\frac{11 \times 132 \div 12 + 11}{108 \div 9 - 1}$**

(A) 14 (B) 13 (C) 12 (D) 11

**Solution :**

$= \frac{11 \times \frac{132}{12} + 11}{\frac{108}{9} - 1}$

$= \frac{11 \times 11 + 11}{12 - 1}$

$= \frac{11 \times 11}{11} + \frac{11}{11}$

$= 11 + 1$

$= 12$

$\therefore$ (C) 12

---

**(71) સાદુંરૂપ આપો : $\frac{29 \times 870 \div 30 + 29}{870 \div 29 - 1}$**

(A) 32 (B) 31 (C) 29 (D) 30

**Solution :**

$= \frac{29 \times \frac{870}{30} + 29}{\frac{870}{29} - 1}$

$= \frac{29\times29+29}{30-1}$

$= \frac{29\times\cancel{29}}{\cancel{29}} + \frac{\overset{1}{\cancel{29}}}{\cancel{29}}$

= 29 + 1

= 30

∴ (D) 30

---

**(72) સાદુંરૂપ આપો : $\frac{30\times930\div31+30}{930\div30-1}$**

(A) 33 (B) 31 (C) 34 (D) 32

**Solution :**

$= \frac{30\times\frac{\overset{30}{\cancel{930}}}{\cancel{31}}+30}{\frac{\overset{31}{\cancel{930}}}{\cancel{30}}-1}$

$= \frac{30\times30}{30}+30$

$= \frac{30\times\cancel{30}}{\cancel{30}} + \frac{\overset{1}{\cancel{30}}}{\cancel{30}}$

= 30 + 1

= 31

∴ (B) 31

---

**(73) સાદુંરૂપ આપો : $\frac{5}{4}+\frac{3}{5}-\frac{9}{10}=?$**

(A) 0.94 (B) 0.96

(C) 0.97 (D) 0.95

**Solution :**

⇨ લ.સા.અ. = 20

$= \frac{\frac{5}{\cancel{4}}(\overset{5}{\cancel{20}})+\frac{3}{\cancel{5}}(\overset{4}{\cancel{20}})-\frac{9}{\cancel{10}}(\overset{2}{\cancel{20}})}{20}$

$= \frac{25+12-18}{20}$

$= \frac{19\times5}{20\times5}$ (અંશ અને છેદમાં 5 વડે ગુણતાં)

$= \frac{95}{100}$

= 0.95

∴ (D) 0.95

**(74) સાદુંરૂપ આપો : $\frac{37}{20}+\frac{3}{10}-\frac{5}{4}=?$**

(A) 0.90 (B) 0.91 (C) 0.89 (D) 0.92

**Solution :**

⇨ લ.સા.અ. = 20

$= \frac{\frac{37}{\cancel{20}}(\overset{1}{\cancel{20}})+\frac{3}{\cancel{10}}(\overset{2}{\cancel{20}})-\frac{5}{\cancel{4}}(\overset{5}{\cancel{20}})}{20}$

$= \frac{37+6-25}{20}$

$= \frac{43-25}{20}$

$= \frac{\overset{9}{\cancel{18}}}{\underset{10}{\cancel{20}}}$

= 0.9

∴ (A) 0.90

---

**(75) સાદુંરૂપ આપો : $\frac{1}{8}+\frac{3}{4}-\frac{5}{8}$**

(A) 0.3 (B) 0.45 (C) 0.5 (D) 0.25

**Solution :**

$= \frac{\frac{1}{\cancel{8}}(\overset{1}{\cancel{8}})+\frac{3}{\cancel{4}}(\overset{2}{\cancel{8}})-\frac{5}{\cancel{8}}(\overset{1}{\cancel{8}})}{8}$

$= \frac{1+6-5}{8}$

$= \frac{7-5}{8}$

$= \frac{\overset{1}{\cancel{2}}}{\underset{4}{\cancel{8}}}$

= 0.25

∴ (D) 0.25

---

**(76) સાદુંરૂપ આપો :**

$\{2^4 \div 8\}^4 + \sqrt{(135-\sqrt{196})}$

(A) 42 (B) 37 (C) 27 (D) 13

**Solution :**

$= \{2^4 \div 8\}^4 + \sqrt{(135-\sqrt{196})}$

$= \left(\frac{2^4}{2^3}\right)^4 + \sqrt{(135-14)}$

$= (2^{4-3})^4 + \sqrt{121}$

$= 2^4 + 11$

$= 16 + 11$

$= 27$

$\therefore$ (C) 27

---

**(77) સાદુંરૂપ આપો : $486 \div \left[\frac{3}{4}\left\{\frac{16}{15}\right\} - \frac{2}{3}\right]$**

(A) 3654 (B) 3645 (C) 3456 (D) 3465

**Solution :**

$= 486 \div \left(\frac{\cancel{3}}{\cancel{4}}\left[\frac{\overset{4}{\cancel{16}}}{\underset{5}{\cancel{15}}}\right] - \frac{2}{3}\right)$

$= 486 \div \left(\frac{4}{5} - \frac{2}{3}\right)$

$= 486 \div \left(\frac{12-10}{15}\right)$

$= 486 \div \left(\frac{2}{15}\right)$

$= \overset{243}{\cancel{486}} \times \frac{15}{\cancel{2}}$

$= 243 \times 15$

$= 3645$

$\therefore$ (B) 3645

---

**(78) સાદુંરૂપ આપો : $468 \div \left[\frac{3}{4}\left(\frac{16}{15}\right) - \frac{2}{3}\right]$**

(A) 3510 (B) 3610 (C) 3410 (D) 3710

**Solution :**

$= 468 \div \left(\frac{\cancel{3}}{\cancel{4}}\left[\frac{\overset{4}{\cancel{16}}}{\underset{5}{\cancel{15}}}\right] - \frac{2}{3}\right)$

$= 468 \div \left(\frac{4}{5} - \frac{2}{3}\right)$

$= 468 \div \left(\frac{12-10}{15}\right)$

$= 468 \div \frac{2}{15}$

$= \overset{234}{\cancel{468}} \times \frac{15}{\cancel{2}}$

$= 234 \times 15$

$= 3510$

$\therefore$ (A) 3510

**(79) સાદુંરૂપ આપો :**

$\left[2(54 \times 17 \times 54 \times 17) \div \left(2\left(\sqrt{289 \div 2}\right)\right)^2\right]$

(A) 2601 (B) 2916

(C) 2704 (D) 2401

**Solution :**

$= 2(54 \times 17 \times 54 \times 17) \div \left(2\left(\sqrt{\frac{289}{2}}\right)\right)^2$

$= 2(54 \times 17 \times 54 \times 17) \div \left(2\left(\frac{17}{\sqrt{2}}\right)\right)^2$

$= 2(54 \times 17 \times 54 \times 17) \div \left(\overset{2}{\cancel{4}} \times \frac{17 \times 17}{\cancel{2}}\right)$

$= \frac{\cancel{2}(54 \times \cancel{17} \times 54 \times \cancel{17})}{\cancel{2} \times \cancel{17} \times \cancel{17}}$

$= 54 \times 54$

$= 2916$

$\therefore$ (B) 2916

---

**(80) સાદુંરૂપ આપો :**

$(21 \times 8 \times 21 \times 16) \div \left(2\left(\sqrt{64 \div 2}\right)\right)^2$

(A) 441 (B) 484

(C) 144 (D) 324

**Solution :**

$= (21 \times 8 \times 21 \times 16) \div \left(2\left(\sqrt{64 \div 2}\right)\right)^2$

$= (21 \times 8 \times 21 \times 16) \div \left(2\left(\sqrt{\frac{64}{2}}\right)\right)^2$

$= (21 \times 8 \times 21 \times 16) \div \left(2\left(\sqrt{32}\right)\right)^2$

$= (21 \times 8 \times 21 \times 16) \div (4 \times 32)$

$= \frac{21 \times \overset{2}{\cancel{8}} \times 21 \times \cancel{16}}{\cancel{4} \times \underset{2}{\cancel{32}}}$

$= \frac{21 \times 21 \times \cancel{2}}{\cancel{2}}$

$= 21 \times 21$

$= 441$

$\therefore$ (A) 441

**(81) સાદુંરૂપ આપો :**

$(38 \times 33 \times 38 \times 33) \div \left(2\left(\sqrt{1089 \div 2}\right)^2\right)$

(A) 1444 (B) 5444 (C) 1222 (D) 2444

**Solution :**

$= 38\times33\times38\times33 \div \left(2\left(\sqrt{\frac{1089}{2}}\right)^2\right)$

$= 38\times33\times38\times33 \div \left(2\left(\frac{33}{\sqrt{2}}\right)^2\right)$

$= 38\times33\times38\times33 \div \left(\cancel{2}\left(\frac{33\times33}{\cancel{2}}\right)\right)$

$= \frac{38\times\cancel{33}\times38\times\cancel{33}}{\cancel{33}\times\cancel{33}}$

$= 38 \times 38$

$= 1444$

$\boxed{\therefore \text{(A) } 1444}$

---

**(82) $\left\{\frac{12}{9-6}\right\} + 8 - \left(\frac{16}{4}\right) - (3 - 5 - 4)$ ની કિંમત શોધો.**

(A) 14 (B) 35 (C) 42 (D) 24

**Solution :**

$= \left\{\frac{12}{9-6}\right\} + 8 - \left(\frac{\overset{4}{\cancel{16}}}{\cancel{4}}\right) - (3-5-4)$

$= \left\{\frac{12}{3}\right\} + 8 - (4) - (3-9)$

$= \left\{\frac{12}{3}\right\} + 8 - (4) - (-6)$

$= \left\{\frac{12}{3}\right\} + 8 - 4 + 6$

$= 4 + 8 - 4 + 6$

$= 14$

$\boxed{\therefore \text{(A) } 14}$

---

**(83) $\left[3\frac{1}{2} \div \left\{1\frac{1}{4} - \left(\frac{1}{2} + \frac{1}{3}\right)\right\} + \frac{7}{5}\right]$ નું સાદુંરૂપ આપો.**

(A) 5 (B) 7 (C) $9\frac{4}{5}$ (D) $8\frac{5}{6}$

**Solution :**

$= \left[3\frac{1}{2} \div \left\{1\frac{1}{4} - \left(\frac{1}{2} + \frac{1}{3}\right)\right\} + \frac{7}{5}\right]$

$= \left[\frac{7}{2} \div \left\{\frac{5}{4} - \frac{5}{6}\right\} + \frac{7}{5}\right]$

$= \left[\frac{7}{2} \div \left\{\frac{30-20}{24}\right\} + \frac{7}{5}\right]$

$= \left[\frac{7}{2} \div \left\{\frac{10}{24}\right\} + \frac{7}{5}\right]$

$= \left[\frac{7}{\cancel{2}} \times \frac{\overset{6}{\cancel{\overset{12}{\cancel{24}}}}}{\underset{5}{\cancel{10}}} + \frac{7}{5}\right]$

$= \frac{42}{5} + \frac{7}{5}$

$= \frac{42+7}{5}$

$= \frac{49}{5}$

$= 9\frac{4}{5}$

$\boxed{\therefore \text{(C) } 9\frac{4}{5}}$

---

## Type # 11

❑ **સમજૂતી :**

⇨ દશાંશ આપેલ હોય તેવી સંખ્યાનું વર્ગમૂળ કાઢતા આપેલ દશાંશના અડધા વર્ગમૂળની બહાર આવે.

⇨ $\sqrt{3136} = 56$

⇨ $\sqrt{31.36} = 5.6$

⇨ $\sqrt{0.3136} = 0.56$

⇨ $\sqrt{0.003136} = 0.056$

⇨ $\sqrt{0.00003136} = 0.0056$

---

**(84) $x$ ની કિંમત શોધો : $\frac{2}{5}(x) + \frac{3}{10}(x) - \frac{3}{5}(x) = 531$**

(A) 5210 (B) 5410 (C) 5310 (D) 5510

**Solution :**

⇨ $\frac{2}{5}x + \frac{3}{10}x - \frac{3}{5}x = 531$

$\frac{2x}{5} + \frac{3x}{10} - \frac{3x}{5} = 531$

$\frac{4x + 3x - 6x}{10} = 531$

$\frac{x}{10} = 531$

$x = 531 \times 10$

$x = 5310$

$\boxed{\therefore \text{(C) } 5310}$

**(85) $x$ ની કિંમત શોધો :**

$$\frac{2}{5}(x)+\frac{3}{10}(x)-\frac{3}{5}(x)=521$$

(A) 5310 (B) 5110

(C) 5210 (D) 5410

**Solution :**

⇨ $\frac{2}{5}x+\frac{3}{10}x-\frac{3}{5}x = 521$

$\frac{2x}{5}+\frac{3x}{10}-\frac{3x}{5} = 521$

$\frac{4x+3x-6x}{10} = 521$

$\frac{x}{10} = 521$

$x = 521 \times 10$

$x = 5210$

∴ (C) 5210

---

**(86) $x$ ની કિંમત શોધો :**

**$15.73 + 13.25 + 16.73 - 28.64 = 3x$**

(A) 5.69 (B) 5.49

(C) 5.59 (D) 5.79

**Solution :**

⇨ $15.73 + 13.25 + 16.73 - 28.64 = 3x$

$45.71 - 28.64 = 3x$

$\frac{17.07}{3} = x$

$x = 5.69$

∴ (A) 5.69

---

**(87) સાદુંરૂપ આપો : $\sqrt{20.25}+\sqrt{75.69}+8.7$**

(A) 21.5 (B) 21.7

(C) 21.9 (D) 21.3

**Solution :**

```
      45                 87
   4 )20.25           8 )75.69
  +4  16              +8  64
  85  425             167 1169
      425                 1169
      000                 0000
```

⇨ 4.5 + 8.7 + 8.7 = 21.9

∴ (C) 21.9

---

**(88) સાદુંરૂપ આપો : $\sqrt{21.16}+\sqrt{79.21}+8.9$**

(A) 22.6 (B) 22.4

(C) 22.2 (D) 22.8

**Solution :**

```
      46                 89
   4 )2116            8 )7921
  +4  16              +8  64
  86  516             169 1521
      516                 1521
      000                 0000
```

∴ 4.6 + 8.9 + 8.9 = 22.4

∴ (B) 22.4

---

**(89) સાદુંરૂપ આપો : $(13)^3+(-8)^3+(-5)^3$**

(A) $-40 \times 40$ (B) $-39 \times 40$

(C) $39 \times 40$ (D) $41 \times 38$

**Solution :**

⇨ જ્યારે એકી ઘાત હોય, આધાર માઇનસ (–) હોય તો તેનું સાદુંરૂપ માઇનસ (–) આવે.

⇨ $(13)^3 + (-8)^3 + (-5)^3$

$= 2197 + (-512) + (-125)$

$= 2197 - 637$

$= 1560$

$= 39 \times 40$

∴ (C) $39 \times 40$

---

**(90) $\sqrt{16.81}+\sqrt{67.24} \div 2$**

(A) 8.4 (B) 8

(C) 8.2 (D) 8.1

**Solution :**

```
      41                 82
   4 )1681            8 )6724
  +4  16              +8  64
  81  0081            162 0324
       81                  324
       00                  000
```

⇨ $4.1 + (8.2 \div 2) = 4.1 + 4.1$

$= 8.2$

∴ (C) 8.2

**(91) પ્રશ્નાર્થની જગ્યાએ શું આવશે ?**

**12.34 + 23.45 + 34.56 − 45.67 = 2 × ?**

(A) 13.34 (B) 14.34

(C) 12.34 (D) 11.34

**Solution :**

⇨ 12.34 + 23.45 + 34.56 − 45.67 = 2 × ?

70.35 − 45.67 = 2 × ?

24.68 = 2$x$

$x = \frac{24.68}{2}$

$x$ = 12.34

∴ (C) 12.34

---

**(92) $x$ ની કિંમત શોધો :**

**15.37 + 13.52 + 16.37 − 28.46 = 3$x$**

(A) 5.7 (B) 5.5 (C) 5.4 (D) 5.6

**Solution :**

⇨ 15.37 + 13.52 + 16.37 − 28.46 = 3$x$

45.26 − 28.46 = 3$x$

16.8 = 3$x$

$x = \frac{16.8}{3}$

$x$ = 5.6

∴ (D) 5.6

---

**(93) $x$ ની કિંમત શોધો :**

$$\frac{2}{5}(x) + \frac{3}{10}(x) - \frac{3}{5}(x) = 439$$

(A) 4390 (B) 4590

(C) 4290 (D) 4490

**Solution :**

⇨ $\frac{4x + 3x - 6x}{10} = 439$

$\frac{x}{10} = 439$

$x = 439 \times 10$

$x = 4390$

∴ (A) 4390

---

**(94) સાદુંરૂપ આપો :**

**143 + 14.3 + 1.43 + 0.143 + 0.0143 = ?**

(A) 158.8783 (B) 158.8863

(C) 158.8683 (D) 158.8873

**Solution :**

```
   143.0
+   14.3
+    1.43
+    0.143
+    0.0143
  --------
  158.8873
```

∴ (D) 158.8873

---

**(95) 0.1 + 0.01 + 0.001 + 0.0001 + 0.00001 = ?**

(A) 0.10101 (B) 0.11111

(C) 0.00001 (D) 0.01010

**Solution :**

```
   0.1
+  0.01
+  0.001
+  0.0001
+  0.00001
  --------
   0.11111
```

∴ (B) 0.11111

---

**(96) 0.1 + 0.11 + 0.111 + 0.1111 + 0.11111 = ?**

(A) 0.54321 (B) 0.54325

(C) 0.54252 (D) 0.54378

**Solution :**

```
   0.1
+  0.11
+  0.111
+  0.1111
+  0.11111
  --------
   0.54321
```

⇨ (આપેલી સંખ્યાનો અંતિમ અંકથી એક એક ને ઉમેરીને સરવાળો કરવો.)

∴ (A) 0.54321

---

**(97) 0.3 + 0.33 + 0.333 + 0.3333 + 0.33333 = ?**

(A) 15.2963 (B) 16.2963

(C) 1.62963 (D) 1.52963

**Solution :**

```
   0.3
+  0.33
+  0.333
+  0.3333
+  0.33333
  --------
   1.62963
```

∴ (C) 1.62963

**(98) 0.5 + 0.55 + 0.555 = ?**

(A) 1.605 (B) 1.505

(C) 0.1605 (D) 0.1505

**Solution :**

$$\begin{array}{r} 0.5 \\ +\ 0.55 \\ +\ 0.555 \\ \hline 1.605 \end{array}$$

$\boxed{\therefore \text{ (A) } 1.605}$

## Type # 12

❑ **સમજૂતી :**

| B | O | D | M | A | S |
|---|---|---|---|---|---|
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| 1. | 2. | 3. | 4. | 5. | 6. |
| બ્રેકેટ | OF | ભાગાકાર | ગુણાકાર | સરવાળો | બાદબાકી |

→ 0, {}, []

⇨ સાદુંરૂપ આપતી વખતે નીચેના ક્રમો ધ્યાને રાખી અનુક્રમે સાદુંરૂપ આપવું.

1. $\overline{13-5}$ (બારની નિશાની)
2. ( )
3. { }
4. [ ]
5. of (નો, ની, નુ, ના)
6. ભાગાકાર
7. ગુણાકાર
8. સરવાળો
9. બાદબાકી

**(99) સાદુંરૂપ આપો : 48 – [15 + {38 – (28 – 7)}]**

(A) 19 (B) 18

(C) 16 (D) 17

**Solution :**

= 48 – [15 + {38 – (28 – 7)}]

= 48 – [15 + {38 – 21}]

= 48 – [15 + {17}]

= 48 – 32

= 16

$\boxed{\therefore \text{ (C) } 16}$

**(100) સાદુંરૂપ આપો :**

**79 – [23 – {84 ÷ 7 – (16 – 4) ÷ 4)}]**

(A) 61 (B) 63 (C) 67 (D) 65

**Solution :**

= 79 – [23 – {84 ÷ 7 – (16 – 4) ÷ 4)}]

$= 79 - [23 - \{\overset{12}{\cancel{84}} \div \cancel{7} - \overset{3}{\cancel{12}} \div \cancel{4})\}]$

= 79 – [23 – {12 – 3}]

= 79 – [23 – 9]

= 79 – 14

= 65

$\boxed{\therefore \text{ (D) } 65}$

**(101) સાદુંરૂપ આપો : 49 – [16 + {39 – (29 –7)}]**

(A) 17 (B) 19 (C) 18 (D) 16

**Solution :**

= 49 – [16 + {39 – (29 –7)}]

= 49 – [16 + {39 – 22}]

= 49 – [16 + 17]

= 49 – 33

= 16

$\boxed{\therefore \text{ (D) } 16}$

**(102) સાદુંરૂપ આપો :**

**250 – [90 – {120 ÷ 10– (30 – 60 ÷ 3) ÷ 10}]**

(A) 143 (B) 171 (C) 134 (D) 166

**Solution :**

$250 - [90 - \{120 \div 10 - (30 - \overset{20}{\cancel{60}} \div \cancel{3}) \div 10\}]$

$= 250 - [90 - \{120 \div 10 - (30 - 20) \div 10\}]$

$= 250 - [90 - \{\overset{12}{\cancel{120}} \div \cancel{10} - (\overset{1}{\cancel{10}} \div \cancel{10}\}]$

$= 250 - [90 - (12 - 1)]$

= 250 – [90 – 11]

= 250 – 79

= 171

$\boxed{\therefore \text{ (B) } 171}$

**(103) સાદુંરૂપ આપો :**

**[120–[100–{81 ÷ 9 – (65 – 100 ÷ 2) ÷ 15}]**

(A) 36 (B) 32 (C) 28 (D) 34

**Solution :**

⇨ $120 - [100 - \{81 \div 9 - (65 - \overset{50}{\cancel{100}} \div \cancel{2}) \div 15\}]$

$= 120 - [100 - \{\overset{9}{\cancel{81}} \div \cancel{9} - (65 - 50) \div 15\}]$

$= 120 - [100 - \{9 - (\overset{1}{\cancel{15}} \div \cancel{15})\}]$

$= 120 - [100 - \{9 - 1\}]$

$= 120 - [100 - 8]$

$= 120 - 92$

$= 28$

$\therefore$ (C) 28

---

**(104) સાદુંરૂપ આપો :**

**48 ÷ [35 − {30 − (31 − 26 ÷ 2 × 4)}] = ?**

(A) −2 (B) −3 (C) −4 (D) −8

**Solution :**

⇨ $48 \div [35 - \{30 - (31 - \overset{13}{\cancel{26}} \div \cancel{2} \times 4)\}]$

$= 48 \div [35 - \{30 - (31 - 13 \times 4)\}]$

$= 48 \div [35 - \{30 - (31 - 52)\}]$

$= 48 \div [35 - \{30 + 21)\}]$

$= 48 \div [35 - 51]$

$= \overset{3}{\cancel{48}} \div [-\cancel{16}]$

$= -3$

$\therefore$ (B) −3

---

**(105) 72 − [20 − {10 − (6 − $\overline{6-4}$)}] ની કિંમત શોધો.**

(A) 58 (B) 48 (C) 56 (D) 44

**Solution :**

⇨ $72 - [20 - \{10 - (6 - \overline{6-4})\}]$

$= 72 - [20 - \{10 - (6 - 2)\}]$

$= 72 - [20 - \{10 - 4\}]$

$= 72 - [20 - \{+6\}]$

$= 72 - 14$

$= 58$

$\therefore$ (A) 58

---

**(106) 48 + [25 − {20 − (11 − 16 ÷ 2 × 4)}]**

(A) 40 (B) 32 (C) 62 (D) 58

**Solution :**

⇨ $48 + [25 - \{20 - (11 - \overset{8}{\cancel{16}} \div \cancel{2} \times 4)\}]$

$= 48 + [25 - \{20 - (11 - (8 \times 4))\}]$

$= 48 + [25 - \{20 - (11 - 32)\}]$

$= 48 + [25 - \{20 + 21\}]$

$= 48 + [25 - 41]$

$= 48 + [-16]$

$= 48 - 16$

$= 32$

$\therefore$ (B) 32

---

**(107) 72 ÷ [38 − {30 − (31 − 60 ÷ 4 × 5)}] = ?**

(A) −2 (B) −3 (C) −4 (D) −8

**Solution :**

⇨ $72 \div [38 - \{30 - (31 - (\overset{15}{\cancel{60}} \div \cancel{4}) \times 5)\}]$

$= 72 \div [38 - \{30 - (31 - (15 \times 5))\}]$

$= 72 \div [38 - \{30 - (31 - 75)\}]$

$= 72 \div [38 - \{30 - (-44)\}]$

$= 72 \div [38 - \{30 + 44\}]$

$= 72 \div [38 - 74]$

$= \overset{2}{\cancel{72}} \div [-\cancel{36}]$

$= -2$

$\therefore$ (A) −2

---

**(108) 113 + 11.3 + 1.13 + 0.113 + 0.0113 = ?**

(A) 125.5643 (B) 125.5453

(C) 125.5553 (D) 125.5543

**Solution :**

$$\begin{array}{r} 113.0 \\ +\ 11.3 \\ +\ 1.13 \\ +\ 0.113 \\ +\ 0.0113 \\ \hline 125.5543 \end{array}$$

$\therefore$ (D) 125.5543

---

**(109) 256 + 25.6 + 2.56 + 0.256 + 0.0256 = ?**

(A) 284.6536 (B) 284.4666

(C) 284.4766 (D) 284.4416

**Solution :**

$$\begin{array}{r} 256.0 \\ +\ 25.6 \\ +\ 2.56 \\ +\ 0.256 \\ +\ 0.0256 \\ \hline 284.4416 \end{array}$$

$\therefore$ (D) 284.4416

**(110)** $110 \div \left[53-\left\{4^3-\{37-136 \div \overline{17 \times 2}\}\right\}\right] = ?$

(A) 11 (B) 22 (C) 5 (D) 10

**Solution :**

⇨ $110 \div \left[53-\left\{4^3-\{37-136 \div \overline{17 \times 2}\}\right\}\right] = ?$

$= 110 \div [53 - \{4^3 - \{37 - 136 \div 17 \times 2\}\}]$

$= 110 \div [53 - \{4^3 - (37 - \overset{4}{\cancel{136}} \div \cancel{34})\}]$

$= 110 \div [53 - \{4^3 - \{37 - 4\}\}]$

$= 110 \div [53 - \{4^3 - \{33\}\}]$

$= 110 \div [53 - \{64 - 33\}]$

$= 110 \div [53 - 31]$

$= \overset{5}{\cancel{110}} \div \cancel{22}$

$= 5$

∴ (C) 5

---

**(111)** $[60 \div \{3^3 \times 2-(29-\overline{26-31})\}] = ?$

(A) 5 (B) 10 (C) 6 (D) 3

**Solution :**

⇨ $[60 \div \{3^3 \times 2-(29-\overline{26-31})\}]$

$= [60 \div \{3^3 \times 2 - (29 - (-5))\}]$

$= [60 \div \{3^3 \times 2 - (29 + 5)\}]$

$= [60 \div \{27 \times 2 - 34\}]$

$= [60 \div \{54 - 34\}]$

$= \left[\overset{3}{\cancel{60}} \div \cancel{20}\right]$

$= 3$

∴ (D) 3

---

**(112)** $\dfrac{10-[5-(5+10)]\div 5}{(-5+10)-(5-10)\div 5} = ?$

(A) 1 (B) 2 (C) 5 (D) 10

**Solution :**

⇨ $\dfrac{10-[5-(5+10)]\div 5}{(-5+10)-(5-10)\div 5}$

$= \dfrac{10-[5-15]\div 5}{5-(-5)\div 5}$

$= \dfrac{10-\left[-\overset{2}{\cancel{10}}\right]\div \cancel{5}}{5+(5\div 5)}$

$= \dfrac{10-(-2)}{5+1}$

$= \dfrac{10+2}{5+1}$

$= \dfrac{\overset{2}{\cancel{12}}}{\cancel{6}}$

$= 2$

∴ (B) 2

---

**(113)** $60 \div 5 \times (16 - 8 \div 2) \div 3 = ?$

(A) 48 (B) 16 (C) 1 (D) 32

**Solution :**

⇨ $60 \div 5 \times (16 - \overset{4}{\cancel{8}} \div \cancel{2}) \div 3$

$= 60 \div 5 \times (16 - 4) \div 3$

$= (\overset{12}{\cancel{60}} \div \cancel{5}) \times (\overset{4}{\cancel{12}} \div \cancel{3})$ (× ÷ સાથે થઇ શકે.)

$= 12 \times 4$

$= 48$

∴ (A) 48

---

**(114)** $15 \div 3$ of $2 \times 2 + 9 \div 18$ of $2 \times 4 - 4 \div 8 \times 2$ ની કિંમત શોધો.

(A) 8 (B) 5 (C) $2\frac{3}{4}$ (D) $7\frac{3}{4}$

**Solution :**

⇨ $15 \div 3$ of $2 \times 2 + 9 \div 18$ of $2 \times 4 - 4 \div 8 \times 2$

$= 15 \div 6 \times 2 + 9 \div 36 \times 4 - \dfrac{4}{8} \times 2$

$= \dfrac{15 \times 2}{6} + \dfrac{1}{4} \times 4 - 1$

$= 5 + 1 - 1$

$= 5$

∴ (B) 5

---

**(115)** $20 \div 5$ of $4 \times 8 + 6 \div 24$ of $3 \times 48 - 6 \div 18 \times 9$ નું સાદૂરૂપ આપો.

(A) 9 (B) 6 (C) 4 (D) 1.125

**Solution :**

⇨ $20 \div 5$ of $4 \times 8 + 6 \div 24$ of $3 \times 48 - 6 \div 18 \times 9$

$= 1 \times 8 + 6 \div 72 \times 48 - 3$

$= 8 + \dfrac{6 \times 48}{72} - 3$

$= 5 + 4$

$= 9$

∴ (A) 9

## Type # 13

❑ **સમજૂતી :**

◈ $0.\overline{3}$ ને અપૂર્ણાંકમાં દર્શાવો.

$\therefore 0.\overline{3} = \frac{3}{9} = \frac{1}{3}$

⇨ જેટલા (–) હોય તેટલા 9 લખવાના

$\therefore 0.\overline{1} = \frac{1}{9}$

$\therefore 0.\overline{12} = \frac{12}{99}$

$\therefore 0.\overline{123} = \frac{123}{999}$

$\therefore 0.12\overline{3} \rightarrow \frac{123-12}{900} = \frac{111}{900}$

- સંખ્યા લખી જેમાં બાર કરેલ ન હોય ત બાદ કરો.
- જેટલા બાર તેટલા 9 લખો (છેદમાં)
- જેટલા પર બાર ન હોય તેટલા શૂન્ય લગાવો.

---

**(116) $x$ ની અપૂર્ણાંકમાં કિંમત શોધો. : $x$ = 0.3444444 .....**

(A) $\frac{31}{990}$ (B) $\frac{35}{99}$ (C) $\frac{31}{90}$ (D) $\frac{13}{99}$

**Solution :**

⇨ $x = 0.3\overline{4} = \frac{34-3}{90} = \frac{31}{90}$

$\therefore$ (C) $\frac{31}{90}$

---

**(117) $x$ ની અપૂર્ણાંકમાં કિંમત શોધો. : $x$ = 0.5808080.....**

(A) $\frac{572}{990}$ (B) $\frac{574}{990}$ (C) $\frac{573}{990}$ (D) $\frac{575}{990}$

**Solution :**

⇨ $x = 0.5\overline{80} = \frac{580-5}{990} = \frac{575}{990}$

$\therefore$ (D) $\frac{575}{990}$

---

**(118) $x$ ની કિંમત અપૂર્ણાંકમાં શોધો. : $x$ = 0.3566666.....**

(A) $\frac{324}{900}$ (B) $\frac{321}{990}$ (C) $\frac{321}{99}$ (D) $\frac{321}{900}$

**Solution :**

⇨ $x = 0.35\overline{6} = \frac{356-35}{900} = \frac{321}{900}$

$\therefore$ (D) $\frac{321}{900}$

---

**(119) $x$ ની કિંમત અપૂર્ણાંકમાં શોધો. : $x$ = 0.474747.....**

(A) $\frac{47}{99}$ (B) $\frac{48}{99}$ (C) $\frac{46}{90}$ (D) $\frac{48}{90}$

**Solution :**

⇨ $x = 0.\overline{47} = \frac{47-0}{99} = \frac{47}{99}$

$\therefore$ (A) $\frac{47}{99}$

---

**(120) $x$ ની કિંમત અપૂર્ણાંકમાં શોધો. : $x$ = 0.8422222....**

(A) $\frac{741}{900}$ (B) $\frac{758}{990}$

(C) $\frac{758}{99}$ (D) $\frac{758}{900}$

**Solution :**

⇨ $x = 0.84\overline{2} = \frac{842-84}{900} = \frac{758}{900}$

$\therefore$ (D) $\frac{758}{900}$

---

**(121) જો 0.234343434..... ને $\frac{A}{B}$ ના સ્વરૂપમાં દર્શાવવામાં આવે તો B – Aની કિંમત શું થાય ?**

(A) 379 (B) 376

(C) 378 (D) 377

**Solution :**

⇨ $0.2\overline{34} = \frac{234-2}{990} = \frac{\cancel{232}^{2}}{\cancel{990}_{2}} = \frac{116}{495}$

116 = A 495 = B

$\therefore$ B – A = 495 – 116

= 379

$\therefore$ (A) 379

---

**(122) $1.\overline{6}$ નું સરળ રૂપ લખો.**

(A) $\frac{8}{5}$ (B) $\frac{5}{3}$

(C) $\frac{833}{500}$ (D) $\frac{16}{33}$

**Solution :**

⇨ $1+0.\overline{6} = 1+\frac{\cancel{6}^{2}}{\cancel{9}_{3}} = 1+\frac{2}{3} = \frac{3+2}{3} = \frac{5}{3}$

$\therefore$ (B) $\frac{5}{3}$

---

**(123) $0.5\overline{87}$ ને સરળ રૂપમાં લખો.**

(A) $\frac{93}{167}$ (B) $\frac{97}{165}$

(C) $\frac{95}{167}$ (D) $\frac{91}{165}$

**Solution :**

⇨ $\frac{587-5}{990} = \frac{\cancel{582}^{3}}{\cancel{990}} - \frac{194}{330} = \frac{97}{165}$

$\therefore$ (B) $\frac{97}{165}$

**(124) સાદુંરૂપ આપો : $(0.\overline{39} + 0.\overline{53} - 0.\overline{27})$**

(A) $0.\overline{65}$ (B) $0.\overline{63}$ (C) $0.\overline{62}$ (D) $0.\overline{66}$

**Solution :**

$$\begin{array}{r} 0.\overline{39} \\ +\ \underline{0.\overline{53}} \\ 0.\overline{92} \\ -\ \underline{0.\overline{27}} \\ 0.\overline{65} \end{array}$$

$\therefore$ (A) $0.\overline{65}$

---

**(125) સાદુંરૂપ આપો : $(0.\overline{23} + 0.\overline{63} + 0.\overline{15})$**

(A) $2\frac{9}{99}$ (B) $4\frac{4}{9}$ (C) $3\frac{3}{99}$ (D) $1\frac{2}{99}$

**Solution :**

⇨ જ્યારે છેદ સમાન હોય ત્યારે અંશનો સિધો સરવાળો થાય.

⇨ $\frac{23}{99}+\frac{63}{99}+\frac{15}{99} = \frac{101}{99} = 1\frac{2}{99}$

$\therefore$ (D) $1\frac{2}{99}$

---

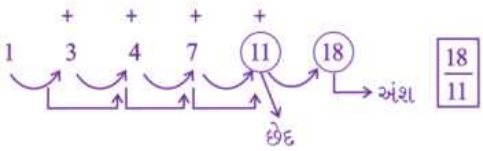
## Type # 14

❑ **સમજૂતી :**

(અંતિમ પદની સંખ્યાને દર્શાવ્યા મુજબ લખો)

- જેટલા સરવાળાની નિશાની હોય તે લખો. ત્યારબાદ બંને કિંમતનો સરવાળો કરો.

$$1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{3}}}}$$

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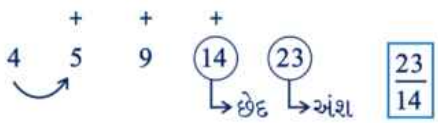
**(126) $1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{4}{5}}} = ?$**

(A) $\frac{21}{17}$ (B) $\frac{17}{13}$ (C) $\frac{22}{13}$ (D) $\frac{23}{14}$

**Solution :**




$\therefore$ (D) $\frac{23}{14}$

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**(127) $1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\frac{2}{3}}}}$**

(A) $\frac{21}{13}$ (B) $\frac{17}{2}$

(C) $\frac{34}{21}$ (D) $\frac{8}{5}$

**Solution :**

$$\begin{array}{ccccccc} & + & + & + & + & + & \\ 2 & 3 & 5 & 8 & 13 & 21 & 34 = \frac{34}{21} \\ & & & & & \uparrow & \uparrow \\ & & & & & \text{છેદ} & \text{અંશ} \end{array}$$

$\therefore$ (C) $\frac{34}{21}$

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**(128) જો $x = 1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\frac{1}{2}}}}$ હોય, તો $2x+\frac{11}{4}$ ની કિંમત શોધો.**

(A) 6 (B) $\frac{13}{8}$

(C) 4 (D) $\frac{7}{8}$

**Solution :**

$$\begin{array}{cccccc} & + & + & + & + & \\ 1 & 2 & 3 & 5 & 8 & 13 \\ & & & & \uparrow & \uparrow \\ & & & & \text{છેદ} & \text{અંશ} \end{array}$$

$x = \frac{13}{8}$

$= 2x + \frac{11}{4} = 2\left(\frac{13}{8}\right) + \frac{11}{4} = \frac{13+11}{4} = \frac{\overset{6}{\cancel{24}}}{\cancel{4}} = 6$

$\therefore$ (A) 6

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**(129) $1-\cfrac{1}{1-\cfrac{1}{1-\frac{1}{5}}}$**

(A) 5 (B) 7 (C) 9 (D) 13

**Solution :**

$$\begin{array}{ccccc} & - & - & - & \\ 1 & 5 & 4 & -1 & -5 \\ & & & \uparrow & \uparrow \\ & & & \text{છેદ} & \text{અંશ} \end{array}$$

$= \frac{-5}{-1} = 5$

$\therefore$ (A) 5

**(130)** $1-\cfrac{1}{1-\cfrac{1}{1-\cfrac{1}{1-\frac{1}{4}}}}$

(A) $\frac{2}{5}$ (B) $\frac{3}{4}$ (C) $\frac{5}{7}$ (D) $\frac{7}{3}$

**Solution :**

$- \quad - \quad - \quad -$

$1 \quad 4 \quad 3 \quad -1 \quad -4 \quad -3 \quad = \frac{3}{4}$

↑ છેદ ↑ અંશ

$\therefore$ (B) $\frac{3}{4}$

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**(131)** $1+\cfrac{1}{1-\cfrac{1}{1+\cfrac{1}{1-\cfrac{1}{1+\frac{1}{3}}}}}$

(A) $\frac{1}{2}$ (B) $\frac{11}{7}$ (C) $\frac{3}{4}$ (D) $\frac{9}{4}$

**Solution :**

$+ \quad - \quad + \quad - \quad +$

$1 \quad 3 \quad 4 \quad 1 \quad 5 \quad 4 \quad 9 \quad = \frac{9}{4}$

↑ છેદ ↑ અંશ

$\therefore$ (D) $\frac{9}{4}$

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## Type # 15

**(132)** નીચેના અપૂર્ણાંકમાંથી સૌથી મોટો અપૂર્ણાંક કયો ?

$\frac{1}{2}, \frac{5}{7}, \frac{3}{4}, \frac{6}{7}$

(A) $\frac{1}{2}$ (B) $\frac{5}{7}$ (C) $\frac{3}{4}$ (D) $\frac{6}{7}$

**Solution :**

$\frac{1}{2}$ 1×2 $\quad \frac{5}{7}$ 2×1 $\quad \frac{3}{4}$ 1×2 $\quad \frac{6}{7}$ 1×2

$\frac{2}{4}$ 2 $\quad \frac{5}{7}$ 2 $\quad \frac{6}{8}$ 2 $\quad \frac{12}{14}$ 2

(જ્યારે તફાવત સમાન હોય ત્યારે જેનો અંશ મોટો તે જવાબ બને.)

$\therefore$ (D) $\frac{6}{7}$

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**(133)** નીચેના અપૂર્ણાંકમાંથી સૌથી નાનો અપૂર્ણાંક કયો ?

$\frac{5}{11}, \frac{7}{12}, \frac{8}{13}, \frac{9}{17}$

(A) $\frac{8}{13}$ (B) $\frac{5}{11}$ (C) $\frac{9}{17}$ (D) $\frac{7}{12}$

**Solution :**

= 5, 6, 8

= 8 × 3 × 5

= 120 લ.સા.અ.

$\frac{5}{11}$ 6×20 $\quad \frac{7}{12}$ 5×24 $\quad \frac{8}{13}$ 5×24 $\quad \frac{9}{17}$ 8×15

$\frac{100}{220} \quad \frac{168}{288} \quad \frac{192}{312} \quad \frac{135}{255}$

⇨ જ્યારે તફાવત સમાન હોય ત્યારે જેનો અંશ નાનો તે નાનો અપૂર્ણાંક બને.

$\therefore$ (B) $\frac{5}{11}$

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**(134)** નીચે આપેલા અપૂર્ણાંકોમાંથી સૌથી મોટો અને સૌથી નાના અપૂર્ણાંક વચ્ચેનો તફાવત શોધો.

$\frac{5}{11}, \frac{5}{7}, \frac{3}{8}, \frac{6}{11}$

(A) $\frac{17}{56}$ (B) $\frac{19}{56}$ (C) $\frac{1}{7}$ (D) $\frac{23}{56}$

**Solution :**

⇨ 6, 2, 5, 5 = 30 લ.સા.અ.

$\frac{5}{11}$ 6×5 $\quad \frac{5}{7}$ 2×15 $\quad \frac{3}{8}$ 5×6 $\quad \frac{6}{11}$ 5×6

25 $\quad \boxed{75} \quad \boxed{18} \quad$ 36

⇨ $\frac{5}{7}-\frac{3}{8} = \frac{40-21}{56} = \frac{19}{56}$

$\therefore$ (B) $\frac{19}{56}$

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**(135)** $\frac{5}{9}, \frac{7}{11}, \frac{8}{15}$ અને $\frac{11}{17}$ માંથી સૌથી મોટો અને સૌથી નાના અપૂર્ણાંક વચ્ચેનો તફાવત શોધો.

(A) $\frac{29}{255}$ (B) $\frac{8}{99}$ (C) $\frac{1}{45}$ (D) $\frac{17}{165}$

**Solution :**

⇨ 4 4 ~~7~~ ~~6~~

⇨ 7 × 6 × 2 = 84

$\frac{5}{9}$ 4×21 $\quad \frac{7}{11}$ 4×21 $\quad \frac{8}{15}$ 7×12 $\quad \frac{11}{17}$ 6×14

105 $\quad$ 147 $\quad$ (96) $\quad$ (154)

⇨ $\frac{11}{17}-\frac{8}{15} = \frac{165-136}{255} = \frac{29}{255}$

$\therefore$ (A) $\frac{29}{255}$

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**(136)** નીચેનામાંથી નાની સંખ્યા કઈ ?

$\sqrt{3}, \sqrt[3]{2}, \sqrt{2}$ અને $\sqrt[3]{4}$

(A) $\sqrt{2}$ (B) $\sqrt[3]{2}$ (C) $\sqrt{3}$ (D) $\sqrt[3]{4}$

**Solution :**

= 2 × 3 = 6

$(3)^{\frac{1}{\cancel{2}}\times\cancel{6}^{3}}$ $(2)^{\frac{1}{\cancel{3}}\times\cancel{6}^{2}}$ $(2)^{\frac{1}{\cancel{2}}\times\cancel{6}^{3}}$ $(4)^{\frac{1}{\cancel{3}}\times\cancel{6}^{2}}$

$3^3$ $2^2$ $2^3$ $4^2$

↓ ↓ ↓ ↓

27 4 8 16

$= \sqrt[3]{2}$

$\therefore$ (B) $\sqrt[3]{2}$

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**(137)** $2^{\frac{1}{2}}, 3^{\frac{1}{3}}, 4^{\frac{1}{4}}, 6^{\frac{1}{6}}$ અને $12^{\frac{1}{12}}$ માંથી સૌથી મોટી સંખ્યા કઈ છે ?

(A) $2^{\frac{1}{2}}$ (B) $3^{\frac{1}{3}}$ (C) $4^{\frac{1}{4}}$ (D) $6^{\frac{1}{6}}$

**Solution :**

⇨ 2, 3, 4, 6, 12 = 12 લ.સા.અ.

$2^{\frac{1}{\cancel{2}}\times\cancel{12}^{6}}$ $3^{\frac{1}{\cancel{3}}\times\cancel{12}^{4}}$ $4^{\frac{1}{\cancel{4}}\times\cancel{12}^{3}}$ $6^{\frac{1}{\cancel{6}}\times\cancel{12}^{2}}$ $12^{\frac{1}{\cancel{12}}\times\cancel{12}^{1}}$

$2^6$ $3^4$ $4^3$ $6^2$ $12^1$

↑

64 81 64 36 12

$= 3^{\frac{1}{3}}$

$\therefore$ (B) $3^{\frac{1}{3}}$

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**(138)** નીચેનામાંથી કઈ સંખ્યા પૂર્ણવર્ગ છે ?

(A) 5778 (B) 5777 (C) 5776 (D) 5772

**Solution :**

⇨ પૂર્ણવર્ગ સંખ્યાની એકમનો અંક → 0, 1, 4, 5, 6, 9

⇨ પૂર્ણવર્ગ સંખ્યા ન હોય તેમનો એકમનો અંક :

→ 2, 3, 7, 8

⇨ પૂર્ણવર્ગ સંખ્યાનો સરવાળો કરતાં એકમનો અંક :

→ 1, 9, 4, 7 આવે.

$\therefore$ (C) 5776

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**(139)** $\frac{4}{5}, \frac{7}{8}, \frac{6}{7}, \frac{5}{6}$ ને ચડતા ક્રમમાં ગોઠવો.

(A) $\frac{4}{5}, \frac{7}{8}, \frac{6}{7}, \frac{6}{5}$ (B) $\frac{7}{8}, \frac{6}{7}, \frac{5}{6}, \frac{4}{5}$

(C) $\frac{4}{5}, \frac{5}{6}, \frac{6}{7}, \frac{7}{8}$ (D) $\frac{5}{6}, \frac{6}{7}, \frac{7}{8}, \frac{4}{5}$

**Solution :**

⇨ તમામનો તફાવત 1 એટલે

⇨ સીધી જ સંખ્યાઓ અંશના આધારે ગોઠવો.

$\therefore$ (C) $\frac{4}{5}, \frac{5}{6}, \frac{6}{7}, \frac{7}{8}$

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**(140)** $\frac{3}{5}, \frac{7}{9}, \frac{11}{13}$ ને ઉતરતા ક્રમમાં ગોઠવો.

(A) $\frac{3}{5}, \frac{7}{9}, \frac{11}{13}$ (B) $\frac{7}{9}, \frac{3}{5}, \frac{11}{13}$

(C) $\frac{11}{13}, \frac{7}{9}, \frac{3}{5}$ (D) $\frac{11}{13}, \frac{3}{5}, \frac{7}{9}$

**Solution :**

⇨ તફાવત : 2

$\therefore \frac{11}{13} > \frac{7}{9} > \frac{3}{5}$

$\therefore$ (C) $\frac{11}{13}, \frac{7}{9}, \frac{3}{5}$

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## Type # 16

**(141)** $\left(1-\frac{1}{2}\right)\left(1-\frac{1}{3}\right)\left(1-\frac{1}{4}\right)\ldots\left(1-\frac{1}{23}\right) = ?$

(A) $\frac{1}{23}$ (B) $\frac{1}{22}$ (C) $\frac{1}{3}$ (D) $\frac{1}{2}$

**Solution :**

⇨ $\left(\frac{1}{\cancel{2}}\right)\times\left(\frac{\cancel{2}}{\cancel{3}}\right)\times\left(\frac{\cancel{3}}{\cancel{4}}\right)\ldots\ldots\left(\frac{\cancel{22}}{23}\right) = \left(\frac{1}{23}\right)$

$\therefore$ (A) $\frac{1}{23}$

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**(142)** $\left[\left(1-\frac{1}{3}\right)\left(1-\frac{1}{4}\right)\left(1-\frac{1}{5}\right)\left(1-\frac{1}{6}\right)\ldots\left(1-\frac{1}{99}\right)\left(1-\frac{1}{100}\right)\right]$

(A) $\frac{2}{99}$ (B) $\frac{1}{25}$ (C) $\frac{1}{50}$ (D) $\frac{1}{100}$

**Solution :**

⇨ $\left(\frac{2}{\cancel{3}}\right)\left(\frac{\cancel{3}}{\cancel{4}}\right)\left(\frac{\cancel{4}}{\cancel{5}}\right)\left(\frac{\cancel{5}}{\cancel{6}}\right)\ldots\ldots\left(\frac{\cancel{98}}{\cancel{99}}\right)\left(\frac{\cancel{99}}{100}\right)$

$= \frac{\cancel{2}^{1}}{\cancel{100}_{50}}$

$= \frac{1}{50}$

$\therefore$ (C) $\frac{1}{50}$

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**(143)** $\frac{1}{2}+\frac{1}{6}+\frac{1}{12}+\frac{1}{20}+\frac{1}{30}+\frac{1}{42}+\frac{1}{56}+\frac{1}{72}$

(A) $\frac{1}{2}$ (B) 0 (C) $\frac{8}{9}$ (D) $\frac{1}{2520}$

**Solution :**

⇨ $\frac{1}{1\times2}+\frac{1}{2\times3}+\frac{1}{3\times4}+\frac{1}{4\times5}+\frac{1}{5\times6}+\frac{1}{6\times7}+\frac{1}{7\times8}+\frac{1}{8\times9}$

$\therefore$ સૂત્ર : $\frac{1}{\text{તફાવત}}$ [પ્રથમ પદ – છેલ્લું પદ]

**રીત : 1**

⇨ તમામ અંશનો સરવાળો

⇨ છેદમાં અંતિમ પદ અને પ્રથમ સંખ્યાનો ગુણાકાર

$\therefore \frac{8}{1\times9} = \frac{8}{9}$

**રીત : 2**

$\therefore \frac{1}{1}\left[\frac{1}{1} - \frac{1}{9}\right] = 1 - \frac{1}{9} = \frac{8}{9}$

$\therefore$ (C) $\frac{8}{9}$

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**(144)** $\frac{5}{2^2 3^2} + \frac{7}{3^2 \cdot 4^2} + \frac{9}{4^2 \cdot 5^2} + \frac{11}{5^2 \cdot 6^2} + \frac{13}{6^2 \cdot 7^2} + \frac{15}{7^2 \cdot 8^2} + \frac{17}{8^2 \cdot 9^2} + \frac{19}{9^2 \cdot 10^2}$

(A) $\frac{1}{100}$ (B) $\frac{6}{25}$ (C) $\frac{101}{100}$ (D) 1

**Solution :**

$= \frac{5}{2^2 3^2} + \frac{7}{3^2 \cdot 4^2} + \frac{9}{4^2 \cdot 5^2} + \frac{11}{5^2 \cdot 6^2} + \frac{13}{6^2 \cdot 7^2} + \frac{15}{7^2 \cdot 8^2} + \frac{17}{8^2 \cdot 9^2} + \frac{19}{9^2 \cdot 10^2}$

$= \frac{5}{4\times9} + \frac{7}{9\times16} + \frac{9}{16\times25} + \frac{11}{25\times36} + \frac{13}{36\times49} + \frac{15}{49\times64} + \frac{17}{64\times81} + \frac{19}{81\times100}$

= પ્રથમ પદ – છેલ્લુ પદ

$= \frac{1}{4} - \frac{1}{100}$

$= \frac{100-4}{400}$

$= \frac{96}{400}$

$= \frac{6}{25}$

$\therefore$ (B) $\frac{6}{25}$

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**(145)** $\frac{1}{1\times4} + \frac{1}{4\times7} + \frac{1}{7\times10} + \frac{1}{10\times13} + \frac{1}{13\times16}$

(A) $\frac{1}{32}$ (B) $\frac{7}{16}$

(C) $\frac{5}{16}$ (D) $\frac{1}{210}$

**Solution :**

⇨ $\underbrace{\frac{1}{1\times4}}_{3} + \underbrace{\frac{1}{4\times7}}_{3} + \frac{1}{7\times10} + \frac{1}{10\times13} + \frac{1}{13\times16}$ તફાવત

$= \frac{1}{3}\left[\frac{1}{1} - \frac{1}{16}\right]$

$= \frac{1}{3}\left[\frac{16-1}{16}\right]$

$= \frac{1}{3} \times \frac{15}{16}$

$= \frac{5}{16}$

(અથવા)

$= \frac{5}{16\times1} = \frac{5}{16}$

$\therefore$ (C) $\frac{5}{16}$

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**(146)** $\frac{1}{3\cdot5} + \frac{1}{5\cdot7} + \frac{1}{7\cdot9} + \frac{1}{9\cdot11} + \frac{1}{11\cdot13} + \frac{1}{13\cdot15}$

(A) $\frac{11}{18}$ (B) $\frac{24}{53}$ (C) $\frac{56}{53}$ (D) $\frac{2}{15}$

**Solution :**

⇨ $\underbrace{\frac{1}{3\times5}}_{2} + \underbrace{\frac{1}{5\times7}}_{2} + \frac{1}{7\times9} + \frac{1}{9\times11} + \frac{1}{11\times13} + \frac{1}{13\times15}$ તફાવત

$= \frac{1}{2}\left[\frac{1}{3} - \frac{1}{15}\right]$

$= \frac{1}{2}\left[\frac{15-3}{45}\right]$

$= \frac{1}{\cancel{2}} \times \frac{\overset{2}{\cancel{12}}}{\underset{15}{\cancel{45}}}$

$= \frac{2}{15}$ (અથવા)

$= \frac{\overset{2}{\cancel{6}}}{15\times\cancel{3}} = \frac{2}{15}$

$\therefore$ (D) $\frac{2}{15}$

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**(147)** $\frac{1}{2\cdot5} + \frac{1}{5\cdot8} + \frac{1}{8\cdot11} + \frac{1}{11\cdot14} + \frac{1}{14\cdot17} + \frac{1}{17\cdot20} + \frac{1}{20\cdot23} + \frac{1}{23\cdot26} + \frac{1}{26\cdot29} = ?$

(A) $\frac{11}{18}$ (B) $\frac{24}{53}$ (C) $\frac{56}{53}$ (D) $\frac{9}{58}$

**Solution :**

⇨ $\frac{1}{2\cdot5} + \frac{1}{5\cdot8} + \frac{1}{8\cdot11} + \frac{1}{11\cdot14} + \frac{1}{14\cdot17} + \underbrace{\frac{1}{17\cdot20}}_{3} + \underbrace{\frac{1}{20\cdot23}}_{3} + \frac{1}{23\cdot26} + \frac{1}{26\cdot29} = ?$ તફાવત

$= \frac{1}{3}\left[\frac{1}{2} - \frac{1}{29}\right] = \frac{1}{3}\left[\frac{29-2}{58}\right] = \frac{1}{\cancel{3}} \times \frac{\overset{9}{\cancel{27}}}{58} = \frac{9}{58}$

(અથવા)

$= \frac{9}{29\times2} = \frac{9}{58}$

$\therefore$ (D) $\frac{9}{58}$

**(148)** $\frac{1}{1\cdot5}+\frac{1}{5\cdot9}+\frac{1}{9\cdot13}+\frac{1}{13\cdot17}+\frac{1}{17\cdot21}=?$

(A) $\frac{11}{18}$ (B) $\frac{5}{21}$

(C) $\frac{56}{53}$ (D) $\frac{14}{65}$

**Solution :**

$$=\frac{1}{\underbrace{1\times5}_{4}}+\frac{1}{\underbrace{5\times9}_{4}}+\frac{1}{9\times13}+\frac{1}{13\times17}+\frac{1}{17\times21}$$

તફાવત

$$=\frac{1}{4}\left[\frac{1}{1}-\frac{1}{21}\right]=\frac{1}{4}\left[\frac{21-1}{21}\right]=\frac{1}{\cancel{4}}\times\frac{\overset{5}{\cancel{20}}}{21}=\frac{5}{21}$$

(અથવા)

$$=\frac{5}{21\times1}=\frac{5}{21}$$

$\therefore$ (B) $\frac{5}{21}$

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**(149)** $\frac{1}{2}+\frac{1}{6}+\frac{1}{12}+\frac{1}{20}+\frac{1}{30}+\frac{1}{42}+\frac{1}{56}+\frac{1}{72}+\frac{1}{90}=?$

(A) $\frac{8}{9}$ (B) $\frac{24}{53}$

(C) $\frac{56}{53}$ (D) $\frac{9}{10}$

**Solution :**

$\Rightarrow$ $\frac{1}{2}+\frac{1}{6}+\frac{1}{12}+\frac{1}{20}+\frac{1}{30}+\frac{1}{42}+\frac{1}{56}+\frac{1}{72}+\frac{1}{90}$

$=\underbrace{1\times2}_{1}\quad\underbrace{2\times3}_{1}\quad 3\times4\quad \ldots\ldots\ldots\quad 8\times9\quad 9\times10$

તફાવત

$$=\frac{1}{1}-\frac{1}{10}=\frac{10-1}{10}=\frac{9}{10}$$

(અથવા)

$$=\frac{9}{10\times1}=\frac{9}{10}$$

$\therefore$ (D) $\frac{9}{10}$

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**(150)** $\frac{1}{30}+\frac{1}{42}+\frac{1}{56}+\frac{1}{72}+\frac{1}{90}+\frac{1}{110}+\frac{1}{132}=?$

(A) $\frac{11}{18}$ (B) $\frac{7}{60}$

(C) $\frac{56}{53}$ (D) $\frac{14}{65}$

**Solution :**

$\Rightarrow$ $\frac{1}{30}+\frac{1}{42}+\frac{1}{56}+\frac{1}{72}+\frac{1}{90}+\frac{1}{110}+\frac{1}{132}$

$5\times6\quad 6\times7\quad 7\times8\quad 8\times9\quad 9\times10\quad 10\times11\quad 11\times12$

$$=\frac{7}{12\times5}=\frac{7}{60}$$

$\therefore$ (B) $\frac{7}{60}$

**(151)** $\frac{1}{30}+\frac{1}{42}+\frac{1}{56}+\frac{1}{72}+\frac{1}{90}+\frac{1}{110}+\frac{1}{132}+\frac{1}{156}+\frac{1}{182}=?$

(A) $\frac{9}{70}$ (B) $\frac{24}{53}$

(C) $\frac{56}{53}$ (D) $\frac{14}{65}$

**Solution :**

$\frac{1}{30}+\frac{1}{42}+\frac{1}{56}+\frac{1}{72}+\frac{1}{90}+\frac{1}{110}+\frac{1}{132}+\frac{1}{156}+\frac{1}{182}$

$5\times6\quad 6\times7\quad 7\times8\quad$ _____ $\quad 12\times13\quad 13\times14$

$$=\frac{9}{14\times5}=\frac{9}{70}$$

$\therefore$ (A) $\frac{9}{70}$

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**(152)** $\frac{1}{1\cdot2\cdot3}+\frac{1}{2\cdot3\cdot4}+\frac{1}{3\cdot4\cdot5}+\frac{1}{4\cdot5\cdot6}=?$

(A) $\frac{11}{18}$ (B) $\frac{24}{53}$

(C) $\frac{56}{53}$ (D) $\frac{7}{30}$

**Solution :**

$$=\frac{1}{4}\left(\frac{4\times7}{5\times6}\right)$$

- 1/4 ફરજિયાત તફાવત લખવો
- અંતિમ પદની પ્રથમ સંખ્યા (4) અંશમાં લખવી.
- ત્યારબાદની બંને સંખ્યાને છેદમાં ગુણાકારમાં લખવી.
- છેદમાં રહેલી અંતિમ સંખ્યા (6) ને 1 ઉમેરી (7) અંશમાં આપેલી સંખ્યા સાથે ગુણવી.

$$=\frac{1}{\cancel{4}}\left(\frac{\cancel{4}\times7}{5\times6}\right)$$

$$=\frac{7}{30}$$

$\therefore$ (D) $\frac{7}{30}$

---

**(153)** $\frac{1}{1\cdot2\cdot3}+\frac{1}{2\cdot3\cdot4}+\frac{1}{3\cdot4\cdot5}+\frac{1}{4\cdot5\cdot6}+\frac{1}{5\cdot6\cdot7}=?$

(A) $\frac{11}{18}$ (B) $\frac{24}{53}$

(C) $\frac{5}{21}$ (D) $\frac{7}{30}$

**Solution :**

$\Rightarrow$ $\frac{1}{1\times2\times3}+\frac{1}{2\times3\times4}+\frac{1}{3\times4\times5}+\frac{1}{4\times5\times6}+\frac{1}{5\times6\times7}$

$$=\frac{1}{\cancel{4}}\left(\frac{5\times\overset{2}{\cancel{8}}}{6\times7}\right)=\frac{5\times\cancel{2}}{\underset{21}{\cancel{42}}}=\frac{5}{21}$$

$\therefore$ (C) $\frac{5}{21}$

## Type # 17

**(154) 0.5 ÷ 0.125 = ?**

(A) 0.625 (B) 0.575
(C) 0.0575 (D) 4

**Solution :**

$$\Rightarrow \frac{0.5}{0.125} = \frac{\frac{5}{10}}{\frac{125}{1000}} = \frac{5\times \cancel{100}^{4}\,\cancel{0}}{\cancel{125}_{5}\times 1\cancel{0}} = \frac{\cancel{5}\times 4}{\cancel{5}} = 4$$

∴ (D) 4

---

**(155) 23 × (64 − 24) ÷ 100 = ?**

(A) 92 (B) 8.2
(C) 9.2 (D) 82

**Solution :**

$$\Rightarrow 23\times\frac{4\cancel{0}}{10\cancel{0}} = \frac{92}{10} = 9.2$$

∴ (C) 9.2

---

**(156) $\frac{4}{8}\div\left(\frac{1}{2}-\frac{1}{3}\right)\times\frac{4}{6}=?$**

(A) 1 (B) $1\frac{1}{2}$
(C) $2\frac{1}{2}$ (D) 2

**Solution :**

$$\Rightarrow \frac{4}{8}\div\left(\frac{3-2}{6}\right)\times\frac{4}{6} = \frac{4}{8}\div\frac{1}{6}\times\frac{4}{6}$$

$$= \frac{4}{\cancel{8}}\times\frac{\cancel{6}}{1}\times\frac{\cancel{4}}{\cancel{6}}$$

$$= \frac{\cancel{4}^{2}}{\cancel{2}^{2}}$$

$$= 2$$

∴ (D) 2

---

**(157) 11 × 5 + 8 − 3 = 2 × 2 × 3 × ?**

(A) 62 (B) 12 (C) 60 (D) 5

**Solution :**

$$\Rightarrow 11\times 5+8-3 = 2\times 2\times 3\times ?$$

$$55+8-3 = 12x$$

$$63-3 = 12x$$

$$x = \frac{\cancel{60}^{5}}{\cancel{12}}$$

$$x = 5$$

∴ (D) 5

---

**(158) $\frac{(589+187)^2-(589-187)^2}{589\times 187}=?$**

(A) 4 (B) 766 (C) 402 (D) $\frac{201}{388}$

**Solution :**

$$\Rightarrow \frac{(589+187)^2-(589-187)^2}{589\times 187}$$

$$= \frac{(a+b)^2-(a-b)^2}{a\times b} \quad (a = 589\ b = 187)$$

$$= \frac{\cancel{a^2}+2ab+\cancel{b^2}-\cancel{a^2}+2ab-\cancel{b^2}}{ab}$$

$$= \frac{4ab}{ab}$$

$$= 4$$

∴ (A) 4

---

**(159) 90 ÷ 6 × (24 − 8 ÷ 4) ÷ 3 = ?**

(A) 18 (B) 20 (C) 110 (D) 16

**Solution :**

$$\Rightarrow 90\div 6\times(24-\cancel{8}^{2}\div\cancel{4})\div 3$$

$$= 90\div 6\times(24-2)\div 3$$

$$= \frac{\cancel{90}^{15}}{\cancel{6}}\times\frac{22}{3}$$

$$= \cancel{15}^{5}\times\frac{22}{\cancel{3}}$$

$$= 110$$

∴ (C) 110

---

**(160) 15.5 × 1.2 = ?**

(A) 18.06 (B) 18.6 (C) 1.86 (D) 186

**Solution :**

$$\Rightarrow \frac{155}{10}\times\frac{12}{10} = \frac{1860}{100} = 18.6$$

∴ (B) 18.6

---

**(161) $\frac{11}{8}\times\frac{56}{33}=?$**

(A) $3\frac{1}{7}$ (B) $7\frac{1}{3}$ (C) $3\frac{1}{2}$ (D) $2\frac{1}{3}$

**Solution :**

$$\Rightarrow \frac{11}{8}\times\frac{56}{33} = \frac{\cancel{11}}{\cancel{8}}\times\frac{\cancel{56}^{7}}{\cancel{33}_{3}} = \frac{7}{3} = 2\frac{1}{3}$$

∴ (D) $2\frac{1}{3}$

**(162)** $(24 \times 36 \times 24) \div (2\sqrt{1296} \div 2)$

(A) 526 (B) 276 (C) 512 (D) 576

**Solution :**

$$(24\times36\times24)\div\left(\frac{\cancel{2}\sqrt{1296}}{\cancel{2}}\right)$$

$$=(24\times\cancel{36}\times24)\div\cancel{36}$$

$$=24\times24$$

$$=576$$

$$\begin{array}{r} 36 \\ 3\overline{)1296} \\ +3 \quad 9 \\ \hline 66 \quad 0396 \\ 396 \\ \hline 000 \end{array}$$

$\therefore$ (D) 576

---

**(163)** 1.8 ÷ 1200 = ?

(A) 0.15 (B) 0.015

(C) 0.00015 (D) 0.0015

**Solution :**

$$=\frac{\frac{18}{10}}{1200}$$

$$=\frac{18}{12\times1000}$$

$$=\frac{3}{2000}$$

$$=\frac{3}{2}\times\frac{1}{1000}$$

$$=\frac{1.5}{1000}$$

= 0.0015

$\therefore$ (D) 0.0015

---

**(164)** 9.87 + 6.54 + 3.21 = ?

(A) 19.62 (B) 18.62 (C) 19.72 (D) 18.52

**Solution :**

⇨ 9.87 + 6.54 + 3.21 = 19.62

$\therefore$ (A) 19.62

---

**(165)** 525 નાં 28% કેટલાં ?

(A) 154 (B) 147 (C) 140 (D) 133

**Solution :**

⇨ $\dfrac{\overset{21}{\cancel{525}}\times\overset{7}{\cancel{28}}}{\underset{\cancel{25}\times\cancel{4}}{\cancel{100}}}=21\times7=147$

$\therefore$ (B) 147

**(166)** 10.747 + 6.59 + 2.26 = ?

(A) 19.597 (B) 18.597

(C) 19.697 (D) 18.697

**Solution :**

$\therefore$ 10.747 + 6.59 + 2.26 = 19.597

$\therefore$ (A) 19.597

---

**(167)** જો $2\frac{1}{2}+3\frac{1}{4}+x+2\frac{1}{3}=13\frac{5}{12}$ તો $x$ ની કિંમત શોધો.

(A) $4\frac{3}{8}$ (B) $11\frac{9}{11}$

(C) $4\frac{2}{3}$ (D) $5\frac{1}{3}$

**Solution :**

⇨ $\frac{5}{2}+\frac{13}{4}+x+\frac{7}{3}=\frac{161}{12}$

લ.સા.અ. = 12

$\therefore \frac{30+39+12x+28}{12}=\frac{161}{12}$

$\therefore \frac{97+12x}{\cancel{12}}=\frac{161}{\cancel{12}}$

$\therefore 97+12x=161$

$\therefore \quad 12x=161-97$

$\therefore \quad 12x=64$

$\therefore \quad x=\frac{\overset{16}{\cancel{64}}}{\underset{3}{\cancel{12}}}$

$\therefore \quad x=5\frac{1}{3}$

$\therefore$ (D) $5\frac{1}{3}$

---

**(168)** $1\frac{1}{2}+11\frac{1}{2}+111\frac{1}{2}+1111\frac{1}{2}$

(A) 1236 (B) 3456

(C) 618 (D) 617

**Solution :**

$$=(1+11+111+1111)+\left(\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}\right)$$

[$\therefore$ છેદ સરખા તો અંશનો સરવાળો]

$$=1234+\frac{\overset{2}{\cancel{4}}}{\cancel{2}}$$

$$=1236$$

$\therefore$ (A) 1236

## Type # 18

❑ **સમજૂતી :**

⇨ આધાર સરખા હોય અને ગુણાકાર કરવાનો હોય તો ઘાતનો સરવાળો થાય.

$a^m \times a^n = a^{m+n}$

⇨ આધાર સરખા હોય અને ભાગકાર કરવાનો હોય તો ઘાતની બાદબાકી થાય.

$a^m \div a^n = a^{m-n}$

⇨ ઘાતની ઘાત કૌંસમાં હોય તો બંને ઘાતનો ગુણાકાર થાય.

$\left(a^m\right)^n = a^{mn}$

---

**(169)** $x$ **ની કિંમત શોધો :** $8^{2.3} \times 4^{0.8} \times 16^{0.4} = 2x$

(A) 11.4 (B) 10.2

(C) 7.7 (D) 10.1

**Solution :**

$\therefore \left(2^3\right)^{2.3} \times \left(2^2\right)^{0.8} \times \left(2^4\right)^{0.4} = 2^x$

$\therefore 2^{6.9} \times 2^{1.6} \times 2^{1.6} = 2^x$

$\therefore 2^{6.9+1.6+1.6} = 2^x$

$\therefore 2^{10.1} = 2^x$

$\therefore x = 10.1$

(આધાર સરખા હોવાથી બંનેની ઘાતની કિંમત પણ સમાન આવે. )

$\boxed{\therefore \text{(D) } 10.1}$

---

**(170)** $95^{2.4} \times 95^{1.3} \div 95^{0.9989} = 95^m$

**તો m ની કિંમત શોધો.**

(A) 2.7011 (B) 0.027011

(C) 0.27011 (D) 27.011

**Solution :**

$= 95^{2.4} \times 95^{1.3} \div 95^{0.9989} = 95^m$

= 2.4 + 1.3

3.7000

− 0.9989

2.7011

$\therefore 95^{2.7011} = 95^m$

$\therefore m = 2.7011$

$\boxed{\therefore \text{(A) } 2.7011}$

---

**(171)** $\dfrac{\left(1024^{0.13} \times 1024^{0.07}\right)}{\left(7^{0.25} \times 49^{0.075} \times 343^{0.2}\right)}$

(A) $\frac{3}{49}$ (B) $\frac{3}{16}$ (C) $\frac{3}{52}$ (D) $\frac{4}{7}$

**Solution :**

$= \dfrac{(2^{10})^{0.13} \times (2^{10})^{0.07}}{7^{0.25} \times (7^2)^{0.075} \times (7^3)^{0.2}}$

$= \dfrac{2^{1.3} \times 2^{0.7}}{7^{0.25} \times 7^{0.15} \times 7^{0.60}}$

$= \dfrac{2^2}{7^1}$

$= \dfrac{4}{7}$

$\boxed{\therefore \text{(D) } \frac{4}{7}}$

---

**(172)** $\sqrt[8]{\sqrt[3]{(81^2)^3}}$

(A) 5 (B) 9 (C) 11 (D) 3

**Solution :**

⇨ $\sqrt[8]{\sqrt[3]{\left(81^2\right)^3}} = 81^{\frac{\cancel{2} \times \cancel{3} \times \frac{1}{\cancel{3}} \times \frac{1}{\cancel{8}}}{4}}$

$= 81^{\frac{1}{4}}$

$= \left(3^{\cancel{4}}\right)^{1/\cancel{4}}$

$= 3^1$

$= 3$

$\boxed{\therefore \text{(D) } 3}$

---

## Type # 19

❑ **સમજૂતી :**

⇨ $\therefore (a+b)^2 = a^2 + 2ab + b^2$

$\therefore \left(x + \dfrac{1}{x}\right)^2 = x^2 + 2 \times \cancel{x} \times \dfrac{1}{\cancel{x}} + \dfrac{1}{x^2}$

$\boxed{= x^2 + \dfrac{1}{x^2} + 2}$

⇨ $\therefore (a-b)^2 = a^2 - 2ab + b^2$

⇨ $\left(x - \dfrac{1}{x}\right)^2 = x^2 - 2\cancel{x} \times \dfrac{1}{\cancel{x}} + \dfrac{1}{x^2}$

$\boxed{= x^2 + \dfrac{1}{x^2} - 2}$

⇨ $\therefore a^2 - b^2 = (a+b)(a-b)$

$= x^2 - \dfrac{1}{x^2} = \boxed{\left(x + \dfrac{1}{x}\right)\left(x - \dfrac{1}{x}\right)}$

⇨ $\therefore a^3+b^3=(a+b)(a^2-ab+b^2)$

$\therefore x^3+\frac{1}{x^3}$

$=\left(x+\frac{1}{x}\right)\left(x^2-\cancel{x}\times\frac{1}{\cancel{x}}+\frac{1}{x^2}\right)$

$\boxed{=\left(x+\frac{1}{x}\right)\left(x^2+\frac{1}{x^2}-1\right)}$

⇨ $\therefore a^3-b^3=(a-b)(a^2+ab+b^2)$

$\therefore x^3-\frac{1}{x^3}$

$=\left(x-\frac{1}{x}\right)\left(x^2+\cancel{x}\times\frac{1}{\cancel{x}}+\frac{1}{x^2}\right)$

$\boxed{=\left(x-\frac{1}{x}\right)\left(x^2+\frac{1}{x^2}+1\right)}$

---

**(173) જો $x+\frac{1}{x}=4$ હોય, તો $x^2+\frac{1}{x^2}=?$**

(A) 62 (B) 14

(C) 16 (D) 36

**Solution :**

**રીત : 1**

$\left(x+\frac{1}{x}\right)^2=(4)^2$ {વર્ગ કરીને −2 કરવા}

$\therefore x^2+2\times\cancel{x}\times\frac{1}{\cancel{x}}+\frac{1}{x^2}=16$

$\therefore x^2+\frac{1}{x^2}+2=16$

$\therefore x^2+\frac{1}{x^2}=16-2$

$\therefore x^2+\frac{1}{x^2}=14$

**રીત : 2**

⇨ $K^2-2=(4)^2-2=16-2=14$

$\boxed{\therefore \text{(B) } 14}$

---

**(174) જો $x+\frac{1}{x}=\sqrt{5}$ હોય, તો $x^3+\frac{1}{x^3}=?$**

(A) $3\sqrt{5}$ (B) $4\sqrt{5}$

(C) $2\sqrt{5}$ (D) $5\sqrt{5}$

**Solution :**

**રીત : 1**

$=\left(x+\frac{1}{x}\right)\left(x^2-\cancel{x}\times\frac{1}{\cancel{x}}+\frac{1}{x^2}\right)$

$=\left(x+\frac{1}{x}\right)\left(x^2+\frac{1}{x^2}-1\right)$

$=\sqrt{5}(3-1)$

$=\sqrt{5}\times 2$

$=2\sqrt{5}$

**રીત : 2**

⇨ $K^2-3K=\left(\sqrt{5}\right)^3-3\left(\sqrt{5}\right)$

$=\sqrt{5}(5-3)$

$=2\sqrt{5}$

$\boxed{\therefore \text{(C) } 2\sqrt{5}}$

---

**(175) જો $x+\frac{1}{x}=3$ હોય, તો $x^3+\frac{1}{x^3}=?$**

(A) 27 (B) 36

(C) 24 (D) 18

**Solution :**

⇨ $x^2+\frac{1}{x^2}$ માટે ↓ વર્ગ

↓ − 2

$(3)^2=9-2=7$

⇨ $\left(x+\frac{1}{x}\right)\left(x^2+\frac{1}{x^2}-1\right)=(3)(7-1)$

$=3\times 6$

$=18$

(અથવા)

$\therefore K^3-3K=(3)^3-3(3)=27-9=18$

$\boxed{\therefore \text{(D) } 18}$

---

**(176) જો $\sqrt{x}+\frac{1}{\sqrt{x}}=\sqrt{6}$ હોય, તો $x^2+\frac{1}{x^2}=?$**

(A) 60 (B) 14

(C) 16 (D) 36

**Solution :**

⇨ **રીત : 1**

$\therefore \sqrt{x}+\frac{1}{\sqrt{x}}=\sqrt{6}$

$\therefore x+\frac{1}{x}=4$

$\therefore (4)^2-2=16-2=14=x^2+\frac{1}{x^2}$

(અથવા)

⇨ **રીત : 2**

$\therefore K^2 - 2 = (\sqrt{6})^2 - 2 = 6 - 2 = 4 \rightarrow x + \frac{1}{x}$

$\therefore K^2 - 2 = (4)^2 - 2 = 16 - 2 = 14 \rightarrow x^2 + \frac{1}{x^2}$

$\therefore$ (B) 14

---

**(177) જો $\sqrt{x} + \frac{1}{\sqrt{x}} = 2\sqrt{2}$ હોય, તો $x^2 + \frac{1}{x^2} = ?$**

(A) 34 (B) 64 (C) 36 (D) 32

**Solution :**

$= 2\sqrt{2} \times 2\sqrt{2} \quad = 4 \times 2 \quad = 8$

$x + \frac{1}{x} = K^2 - 2 = (2\sqrt{2})^2 - 2 = 8 - 2 = 6$

$x^2 + \frac{1}{x^2} = K^2 - 2 = (6)^2 - 2 = 36 - 2 = 34$

$\therefore$ (A) 34

---

**(178) જો $x + \frac{1}{x} = 8$ હોય, તો $\frac{5x}{x^2+1-6x} = ?$**

(A) 2.5 (B) 6 (C) 5 (D) 6.5

**Solution :**

$= \frac{5\cancel{x} / \cancel{x}}{\frac{\cancel{x^2}}{\cancel{x}} + \frac{1}{x} - \frac{6\cancel{x}}{\cancel{x}}}$

$= \frac{5}{x + \frac{1}{x} - 6}$

$= \frac{5}{8 - 6}$

$= \frac{5}{2}$

$= 2.5$

$\therefore$ (A) 2.5

---

**(179) જો $\sqrt{x} - \frac{1}{\sqrt{x}} = \sqrt{6}$ હોય, તો $x^2 + \frac{1}{x^2} = ?$**

(A) 62 (B) 40 (C) 54 (D) 66

**Solution :**

⇨ $\left(\sqrt{x} - \frac{1}{\sqrt{x}}\right) = \sqrt{6} = \left(\sqrt{x} - \frac{1}{\sqrt{x}}\right)^2 = (\sqrt{6})^2$

$\therefore x - 2(\sqrt{x})\left(\frac{1}{\sqrt{x}}\right) + \frac{1}{x} = 6$

$\therefore 2x + \frac{1}{x} = 8$

$\therefore \left(x + \frac{1}{x}\right)^2 = (8)^2$

$\therefore x^2 + 2(x)\left(\frac{1}{x}\right) + \frac{1}{x^2} = 64$

$\therefore x^2 + 2 + \frac{1}{x^2} = 64$

$\therefore x^2 + \frac{1}{x^2} = 64 - 2$

$\therefore x^2 + \frac{1}{x^2} = 62$

$\therefore$ (A) 62

---

**(180) જો $x - \frac{1}{x} = 13$ હોય, તો $x^2 + \frac{1}{x^2} = ?$**

(A) 171 (B) 169

(C) 167 (D) 165

**Solution :**

⇨ $K^2 + 2 = (13)^2 + 2$

$= 169 + 2$

$= 171$

(અથવા)

$\therefore x - \frac{1}{x} = 13$

$\therefore \left(x - \frac{1}{x}\right)^2 = (13)^2$

$\therefore x^2 - 2 \times \cancel{x} \times \frac{1}{\cancel{x}} + \frac{1}{x^2} = 169$

$\therefore x^2 - 2 + \frac{1}{x^2} = 169$

$\therefore x^2 + \frac{1}{x^2} = 169 + 2$

$\therefore x^2 + \frac{1}{x^2} = 171$

$\therefore$ (A) 171

---

**(181) જો $x - \frac{1}{x} = 4$ હોય, તો $x^2 + \frac{1}{x^2} = ?$**

(A) 14 (B) 16

(C) 18 (D) 20

**Solution :**

⇨ $K^2 + 2 = (4)^2 + 2$

$= 16 + 2$

$= 18$

$\therefore$ (C) 18

**(182) જો $x+\frac{1}{x}=3$ હોય, તો $x-\frac{1}{x}=?$**

(A) $\sqrt{2}$ (B) $\sqrt{3}$

(C) $\sqrt{5}$ (D) $\sqrt{6}$

**Solution :**

$\therefore \sqrt{k^2-4}=\sqrt{9-4}=\sqrt{5}$

$\therefore$ (C) $\sqrt{5}$

---

**(183) જો $x+\frac{1}{x}=5$ હોય, તો $x-\frac{1}{x}=?$**

(A) $\sqrt{20}$ (B) $\sqrt{21}$

(C) $\sqrt{25}$ (D) $\sqrt{26}$

**Solution :**

$\therefore \sqrt{k^2-4}=\sqrt{25-4}=\sqrt{21}$

$\therefore$ (B) $\sqrt{21}$

---

**(184) જો $x-\frac{1}{x}=5$ હોય, તો $x+\frac{1}{x}=?$**

(A) $\sqrt{24}$ (B) $\sqrt{26}$

(C) $\sqrt{27}$ (D) $\sqrt{29}$

**Solution :**

$\therefore \sqrt{k^2+4}=\sqrt{25+4}=\sqrt{29}$

$\therefore$ (D) $\sqrt{29}$

---

**(185) જો $x-\frac{1}{x}=4$ હોય, તો $x+\frac{1}{x}=?$**

(A) $\sqrt{18}$ (B) $\sqrt{19}$

(C) $\sqrt{20}$ (D) $\sqrt{21}$

**Solution :**

$\therefore \sqrt{16+4}=\sqrt{20}$

$\therefore$ (C) $\sqrt{20}$

---

**(186) જો $a+\frac{1}{a}=4$ હોય, તો $a-\frac{1}{a}=?$**

(A) 12 (B) $2\sqrt{3}$

(C) $\sqrt{14}$ (D) 14

**Solution :**

$\therefore \sqrt{16-4}=\sqrt{12}$

$=\sqrt{4\times3}$

$=2\sqrt{3}$

$\therefore$ (B) $2\sqrt{3}$

**(187) જો $x+\frac{1}{x}=3$ હોય, તો $x^2-\frac{1}{x^2}=?$**

(A) $2\sqrt{3}$ (B) $5\sqrt{3}$

(C) $3\sqrt{5}$ (D) $4\sqrt{3}$

**Solution :**

$\therefore x-\frac{1}{x}=\sqrt{9-4}=\sqrt{5}$

$\therefore x^2-\frac{1}{x^2}=\left(x+\frac{1}{x}\right)\left(x-\frac{1}{x}\right)$

$=(3)(\sqrt{5})$

$=3\sqrt{5}$

$\therefore$ (C) $3\sqrt{5}$

---

**(188) જો $x+\frac{1}{x}=4$ હોય, તો $x^3+\frac{1}{x^3}=?$**

(A) 52 (B) 66

(C) 76 (D) 80

**Solution :**

$\therefore + + \rightarrow -$ થાય.

⇨ $K^3-3K = (4)^3-3(4)$

$= 64-12$

$= 52$

(અથવા)

⇨ $x^2+\frac{1}{x^2}=16-2=14$

⇨ $x^3+\frac{1}{x^3}=\left(x+\frac{1}{x}\right)\left(x^2-\cancel{x}\times\frac{1}{\cancel{x}}+\frac{1}{x^2}\right)$

$=(4)(14-1)$

$=13\times4$

$=52$

$\therefore$ (A) 52

---

**(189) જો $x-\frac{1}{x}=5$ હોય, તો $x^3-\frac{1}{x^3}=?$**

(A) 120 (B) 130 (C) 135 (D) 140

**Solution :**

$\therefore - - \rightarrow +$ થાય.

⇨ $x-\frac{1}{x}=5$

⇨ $(5)^2+2=25+2=27=x^2+\frac{1}{x^2}$

⇨ $x^3-\frac{1}{x^3}=\left(x-\frac{1}{x}\right)\left(x^2+\cancel{x}\times\frac{1}{\cancel{x}}+\frac{1}{x^2}\right)$

$$= (5)\left(x^2 + \frac{1}{x^2} + 1\right)$$
$$= (5)(27+1)$$
$$= 5 \times 28$$
$$= 140$$

(અથવા)

$$\therefore K^3 + 3K = (5)^3 + 3(5)$$
$$= 125 + 15$$
$$= 140$$

$\therefore$ (D) 140

---

**(190) જો $x + \frac{1}{x} = 3$ હોય, તો $x^3 - \frac{1}{x^3} = ?$**

(A) $6\sqrt{5}$ (B) $7\sqrt{5}$

(C) $8\sqrt{5}$ (D) $9\sqrt{5}$

**Solution :**

⇨ $\therefore x + \frac{1}{x} = 3$

⇨ $\therefore x^2 + \frac{1}{x^2} = 9 - 2 = 7$

⇨ $x - \frac{1}{x} = \sqrt{9-4} = \sqrt{5}$

⇨ $x^3 - \frac{1}{x^3} = \left(x - \frac{1}{x}\right)\left(x^2 + \cancel{x} \times \frac{1}{\cancel{x}} + \frac{1}{x^2}\right)$

$$= \left(\sqrt{5}\right)\left(x^2 + \frac{1}{x^2} + 1\right)$$
$$= (\sqrt{5})(7+1)$$
$$= 8\sqrt{5}$$

$\therefore$ (C) $8\sqrt{5}$

---

**(191) જો $x + \frac{1}{x} = 3$ હોય, તો $x^4 + \frac{1}{x^4} = ?$**

(A) 44 (B) 46

(C) 40 (D) 47

**Solution :**

⇨ $x - \frac{1}{x} = 3$

⇨ $x^2 + \frac{1}{x^2} \rightarrow 9 - 2 = 7$

⇨ $x^4 + \frac{1}{x^4} \rightarrow 7^2 - 2 = 49 - 2 = 47$

$\therefore$ (D) 47

---

**(192) જો $x + \frac{1}{x} = 3$ હોય, તો $x^5 + \frac{1}{x^5} = ?$**

(A) 121 (B) 122

(C) 123 (D) 124

**Solution :**

⇨ $x^2 + \frac{1}{x^2} = 3^2 - 2 = 7$

⇨ $x^3 + \frac{1}{x^3} = K^3 - 3K = 27 - 9 = 18$

⇨ $x^5 + \frac{1}{x^5} = \left(x^2 + \frac{1}{x^2}\right)\left(x^3 + \frac{1}{x^3}\right)$

$$= 7 \times 18$$

⇨ $x^5 + x^2 \times \frac{1}{x^3} + \frac{1}{x^2} \times x^3 \times \frac{1}{x^5} = 126$

$$x^5 + \left(\frac{1}{x} + x\right) + \frac{1}{x^5} = 126$$
$$126 - 3 = x^5 + \frac{1}{x^5}$$
$$123 = x^5 + \frac{1}{x^5}$$

$\therefore$ (C) 123

---

**(193) જો $x + \frac{1}{x} = 3$ હોય, તો $x^6 + \frac{1}{x^6} = ?$**

(A) 321 (B) 322

(C) 323 (D) 324

**Solution :**

⇨ $x^3 + \frac{1}{x^3} = K^3 - 3K$

$$= 3^3 - 3(3)$$
$$= 27 - 9$$
$$= 18$$

⇨ $324 = \left(x^3 + \frac{1}{x^3}\right)\left(x^3 + \frac{1}{x^3}\right)$

$$324 = x^6 + \cancel{x^3} + \frac{1}{\cancel{x^3}} + \frac{1}{\cancel{x^3}} \times \cancel{x^3} + \frac{1}{x^6}$$
$$324 = x^6 + 1 + 1 \times + \frac{1}{x^6}$$
$$324 - 2 = 322$$

$\therefore$ (B) 322

## Type # 20

❑ **સમજૂતી :**

+ મોટી સંખ્યા  – નાની સંખ્યા

---

**(194)** $\sqrt{63+2\sqrt{63+2\sqrt{63+2\sqrt{63.....\infty}}}}$

(A) 3  (B) 6  (C) 9  (D) 12

**Solution :**

⇨ તફાવત 2 હોવો જોઇએ.

⇨ $63 = 7 \times \boxed{9}$

$\therefore$ (C) 9

---

**(195)** $\sqrt{63-2\sqrt{63-2\sqrt{63-2\sqrt{63.....\infty}}}}$

(A) 3  (B) 6  (C) 9  (D) 7

**Solution :**

⇨ તફાવત 2 હોવો જોઇએ.

⇨ $63 = \boxed{7} \times 9$

$\therefore$ (D) 7

---

**(196)** $\sqrt{88-3\sqrt{88-3\sqrt{88-3\sqrt{88.....\infty}}}}$

(A) 8  (B) 13  (C) 15  (D) 18

**Solution :**

⇨ તફાવત 3 હોવી જોઇએ.

⇨ $88 = \boxed{8} \times 11$

$\therefore$ (A) 8

---

**(197)** $\dfrac{\sqrt{72-\sqrt{72-\sqrt{72.....\infty}}}}{\sqrt{56+\sqrt{56+\sqrt{56.....\infty}}}}$

(A) 7  (B) 8  (C) 9  (D) 1

**Solution :**

⇨ $72 = \boxed{8} \times 9$

⇨ $56 = 7 \times \boxed{8}$

$\therefore \dfrac{8}{8} = 1$

$\therefore$ (D) 1

---

**(198)** $\dfrac{47}{2^5 \times 5^3}$ માં દશાંશ પછી કેટલા અંક આવે ?

(A) 2  (B) 3  (C) 4  (D) 5

**Solution :**

⇨ $2^m$ અને $5^n$ માં m અને n જેટલા અંક આવે.

$2^m \times 5^n$ હોય ત્યારે જે ઘાત મોટી તેટલા અંક આવે.

⇨ $\dfrac{47}{2^5 \times 5^3} = 5$

⇨ મોટી ઘાત = 5

⇨ દશાંશ પછી 5 અંક આવે.

$\therefore$ (D) 5

---

**(199)** $\dfrac{43}{2^3 \times 5^7}$ માં દશાંશ પછી કેટલા અંક આવે ?

(A) 3  (B) 4  (C) 5  (D) 7

**Solution :**

⇨ મોટી ઘાત 7 છે.

$\therefore$ (D) 7

---

**(200)** $\dfrac{6}{120}$ માં દશાંશ પછી કેટલા અંક આવે ?

(A) 1  (B) 2  (C) 3  (D) 4

**Solution :**

⇨ $\dfrac{6}{120} = \dfrac{1}{20} = \dfrac{1}{4 \times 5} = \dfrac{1}{2^2 \times 5^1} = 2$

⇨ મોટી ઘાત = 2

$\therefore$ (B) 2

---

**(201)** $7 + 2\sqrt{10}$ નું વર્ગમૂળ શોધો.

(A) $\sqrt{3} + \sqrt{4}$  (B) $\sqrt{6} - 1$

(C) $\sqrt{2} + \sqrt{5}$  (D) $2 + \sqrt{5}$

**Solution :**

⇨ $\sqrt{7 + 2\sqrt{10}}$

$= \sqrt{2 + 5 + 2\sqrt{2} \times \sqrt{5}}$

$= \sqrt{(\sqrt{2})^2 + (\sqrt{5})^2 + 2\sqrt{2} \times \sqrt{5}}$

⇨ $(a+b)^2 = a^2 + 2ab + b^2$

$= \sqrt{(\sqrt{2} + \sqrt{5})^2}$

$= (\sqrt{2} + \sqrt{5})^{\cancel{2} \times \frac{1}{\cancel{2}}}$

$= \cancel{\sqrt{2} + \sqrt{5}}$

$\therefore$ (C) $\sqrt{2} + \sqrt{5}$

**(202)** $8-2\sqrt{15}$ નું વર્ગમૂળ શોધો.

(A) $\sqrt{5}+\sqrt{3}$ (B) $\sqrt{5}$

(C) $\sqrt{5}-\sqrt{3}$ (D) $2+\sqrt{5}$

**Solution :**

⇨ 8 ના એવા ભાગ પાડો કે જેનો ગુણાકાર 15 થવો જોઇએ.

⇨ રકમમાં (–) ની નિશાની હોય તો નાની સંખ્યા આગળ લખવી.

( – હોય તો – લખવા. )

$\sqrt{5}-\sqrt{3}$

⇨ $\sqrt{(\sqrt{5})^2+(\sqrt{3})^2-2\sqrt{5}\sqrt{3}}$

⇨ $(a-b)^2 = a^2+b^2-2ab$

⇨ $(\sqrt{5}-\sqrt{3})^{\cancel{2}\times\frac{1}{\cancel{2}}} = \sqrt{5}-\sqrt{3}$

$\therefore$ (C) $\sqrt{5}-\sqrt{3}$

---

**(203)** $\frac{\sqrt{7}-\sqrt{5}}{\sqrt{7}+\sqrt{5}} = ?$

(A) $6-\sqrt{35}$ (B) $6+\sqrt{35}$

(C) $3-\sqrt{32}$ (D) $3+\sqrt{32}$

**Solution :**

⇨ $\frac{\sqrt{7}-\sqrt{5}}{\sqrt{7}+\sqrt{5}}\times\frac{\sqrt{7}-\sqrt{5}}{\sqrt{7}-\sqrt{5}}-\frac{(\sqrt{7}-\sqrt{5})^2}{(\sqrt{7})^2-(\sqrt{5})^2}$

$=\frac{(\sqrt{7})^2-2\sqrt{7}\sqrt{5}+(\sqrt{5})^2}{7-5}$

$=\frac{7-2\sqrt{35}+5}{2}$

$=\frac{12-2\sqrt{35}}{2}$

$=\frac{\cancel{2}(6-\sqrt{35})}{\cancel{2}}$

$=6-\sqrt{35}$

$\therefore$ (A) $6-\sqrt{35}$

---

**(204)** $\frac{\sqrt{7}+\sqrt{5}}{\sqrt{7}-\sqrt{5}} = ?$

(A) $6-\sqrt{35}$ (B) $6+\sqrt{35}$

(C) $3-\sqrt{32}$ (D) $3+\sqrt{32}$

**Solution :**

⇨ $\frac{(\sqrt{7}+\sqrt{5})^2}{(\sqrt{7})^2-(\sqrt{5})^2} = \frac{12+2\sqrt{35}}{2}$

$=\frac{\cancel{2}(6+\sqrt{35})}{\cancel{2}}$

$=6+\sqrt{35}$

$\therefore$ (B) $6+\sqrt{35}$

---

**(205)** $\frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}} = ?$

(A) $2+\sqrt{15}$ (B) $2-\sqrt{15}$

(C) $4+\sqrt{15}$ (D) $4-\sqrt{15}$

**Solution :**

⇨ $\frac{(\sqrt{5}+\sqrt{3})^2}{(\sqrt{5})^2-(\sqrt{3})^2} = \frac{8+2\sqrt{15}}{2}$

$=\frac{\cancel{2}(4+\sqrt{15})}{\cancel{2}}$

$=(4+\sqrt{15})$

$\therefore$ (C) $4+\sqrt{15}$

---

**(206)** $\frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}}+\frac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}} = ?$

(A) 5 (B) 6 (C) 7 (D) 8

**Solution :**

$=\frac{8}{2}+\cancel{\sqrt{15}}+\frac{8}{2}-\cancel{\sqrt{15}}$

$=\frac{8}{2}+\frac{8}{2}$

$=\frac{8+8}{2}$

$=\frac{16}{2}$

$=8$

$\therefore$ (D) 8

---

**(207)** $\frac{\sqrt{7}+\sqrt{5}}{\sqrt{7}-\sqrt{5}}+\frac{\sqrt{7}-\sqrt{5}}{\sqrt{7}+\sqrt{5}} = ?$

(A) 10 (B) 11 (C) 9 (D) 12

**Solution :**

$=\frac{\overset{6}{\cancel{12}}}{\cancel{2}}+\sqrt{35}+\frac{\overset{6}{\cancel{12}}}{\cancel{2}}-\sqrt{35} = 12$

$\therefore$ (D) 12

**(208)** $x = \sqrt[3]{2\sqrt[3]{2\sqrt[3]{2\sqrt[3]{2}}}}$ તો $x$ ની કિંમત શોધો.

(A) $2^{15/16}$ (B) $2^{41/40}$

(C) $2^{80/81}$ (D) $2^{40/81}$

**Solution :**

⇨ $2^{\frac{40}{81}} = \frac{3^3+3^2+3^1+3^0}{3^4}$

(અથવા)

⇨ $81-1 = \frac{80}{2} = 40$

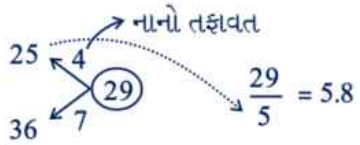
$\therefore$ (D) $2^{40/81}$

## Type # 21

**(209)** 29 નું વર્ગમૂળ શોધો.

(A) 5.2 (B) 5.4 (C) 5.3 (D) 5.6

**Solution :**




⇨ 29ની નજીકની મોટી અને નાની પૂર્ણવર્ગ સંખ્યાનો તફાવતમાં નાના તફાવતની સંખ્યાનો વર્ગ કરી લખવો.

⇨ $\frac{29}{5} = 5.8$

⇨ $5.8 + 5 = 10.8 \rightarrow \frac{10.8}{2} = 5.4$

(આવેલા જવાબમાં છેદ ઉમેરી 2 વડે ભાગવા)

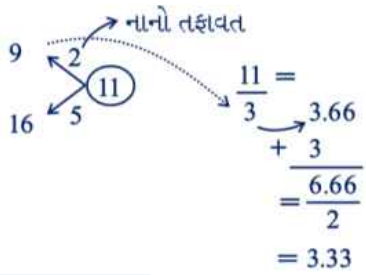
$\therefore$ (B) 5.4

**(210)** 11 નું વર્ગમૂળ શોધો.

(A) 3.34 (B) 3.55

(C) 3.33 (D) 3.76

**Solution :**



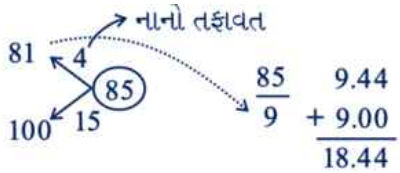

$\therefore$ (C) 3.33

**(211)** 85 નું વર્ગમૂળ શોધો.

(A) 9.34 (B) 9.45

(C) 7.32 (D) 9.22

**Solution :**




⇨ $\frac{18.44}{2} = 9.22$

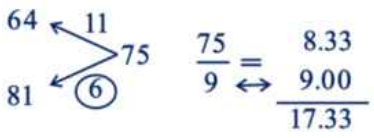
$\therefore$ (D) 9.22

**(212)** 75 નું વર્ગમૂળ શોધો.

(A) 8.23 (B) 8.66

(C) 8.34 (D) 8.11

**Solution :**




$\therefore \frac{17.33}{2} = 8.66$

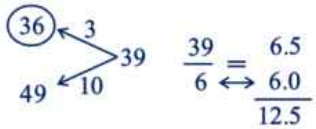
$\therefore$ (B) 8.66

**(213)** 39 નું વર્ગમૂળ શોધો.

(A) 6.45 (B) 6.35

(C) 6.25 (D) 6.22

**Solution :**




$\therefore \frac{12.5}{2} = 6.25$

$\therefore$ (C) 6.25

**(214)** 0.5 નું વર્ગમૂળ શોધો.

(A) 0.707 (B) 0.947

(C) 0.787 (D) 0.897

**Solution :**

$\therefore \frac{5\times10}{10\times10} = \frac{50}{100} = \sqrt{\frac{50}{100}} = \frac{\sqrt{50}}{10}$

49 ← 1, 64 ← 14 → 50

$\frac{50}{7} = \begin{array}{r} 7.14 \\ 7.00 \\ \hline 14.14 \end{array}$

$\therefore \frac{14.14}{2} = 7.07$

$\therefore \frac{\sqrt{50}}{10} = \frac{7.07}{10}$

$= 0.707$

$\boxed{\therefore \text{(A) } 0.707}$

---

**(215) 0.8 નું વર્ગમૂળ શોધો.**

(A) 0.964 (B) 0.694

(C) 0.894 (D) 0.984

**Solution :**

$\therefore \frac{8\times10}{10\times10} = \sqrt{\frac{80}{100}} = \frac{\sqrt{80}}{10}$

64 ← 16, 81 ← 1 → 80

$\frac{80}{9} = \begin{array}{r} 8.88 \\ 9.00 \\ \hline 17.88 \end{array}$

$\therefore \frac{17.88}{2} = 8.94$

$\therefore \frac{\sqrt{80}}{10} = \frac{8.94}{10}$

$= 0.894$

$\boxed{\therefore \text{(C) } 0.894}$

---

**(216) 0.6 નું વર્ગમૂળ શોધો.**

(A) 0.944 (B) 0.874

(C) 0.894 (D) 0.775

**Solution :**

$\therefore \frac{6\times10}{10\times10} = \sqrt{\frac{60}{100}} = \frac{\sqrt{60}}{10}$

49 ← 11, 64 ← 4 → 60

$\frac{60}{8} = \begin{array}{r} 7.5 \\ 8.0 \\ \hline 15.5 \end{array}$

$\therefore \frac{15.5}{2} = 7.75$

$\therefore \frac{7.75}{10} = 0.775$

$\boxed{\therefore \text{(D) } 0.775}$

## Type # 22

**(217) નીચે આપેલ અપૂર્ણાંકમાંથી કયો અપૂર્ણાંક સૌથી નાનો છે.**

(A) $\frac{51}{57}$ (B) $\frac{23}{26}$

(C) $\frac{31}{35}$ (D) $\frac{89}{101}$

**Solution :**

$\frac{51}{57}$ 6×2 $\frac{23}{26}$ 3×4 $\frac{31}{35}$ 4×3 $\frac{89}{101}$ 12

6, 3, 4, 12

102 92 93 89

$\boxed{\therefore \text{(D) } \frac{89}{101}}$

---

**(218) નીચે આપેલ અપૂર્ણાંકને ચડતા ક્રમમાં ગોઠવો.**

1. $\frac{25}{31}$ 2. $\frac{11}{14}$ 3. $\frac{15}{19}$ 4. $\frac{41}{53}$

(A) 1, 2, 3, 4 (B) 1, 4, 3, 2

(C) 4, 2, 3, 1 (D) 2, 3, 4, 1

**Solution :**

6 $\frac{25}{31}$ 3 $\frac{11}{14}$ 4 $\frac{15}{19}$ $\frac{41}{53}$ 12

1 2 3 4

6 3 4 12 12

50 44 45 41

$\therefore \frac{41}{53}, \frac{11}{14}, \frac{15}{19}, \frac{25}{31}$

$\boxed{\therefore \text{(C) } 4, 2, 3, 1}$

---

**(219) નીચે આપેલ અપૂર્ણાંકને ચડતા ક્રમમાં ગોઠવો.**

1. $\frac{93}{95}$ 2. $\frac{97}{99}$ 3. $\frac{85}{87}$ 4. $\frac{91}{93}$

(A) 2, 3, 1, 4 (B) 1, 2, 3, 4

(C) 3, 4, 1, 2 (D) 4, 2, 3, 1

**Solution :**

$\frac{93}{95}$ 2 $\frac{97}{99}$ 2 $\frac{85}{87}$ 2 $\frac{91}{93}$ 2

$\boxed{\therefore \text{(C) } 3, 4, 1, 2}$

---

**(220) નીચે આપેલ અપૂર્ણાંકને ચડતા ક્રમમાં ગોઠવો.**

1. $\frac{147}{150}$ 2. $\frac{181}{184}$ 3. $\frac{193}{196}$ 4. $\frac{141}{144}$

(A) 4, 1, 2, 3 (B) 4, 2, 3, 1

(C) 1, 2, 3, 4 (D) 2, 3, 4, 1