Under CSR Support by ipca | Foundation

missiongyan LET'S LEARN TOGETHER

इ-पाठशाला कार्यक्रम

Class 9th

MATHS

संख्या पद्धति

RAPID REVISION 02



Under CSR Support by
ipca | Foundation

missiongyan
LET'S LEARN TOGETHER

18. निम्न का परिमेय अथवा अपरिमेय के रूप में वर्गीकरण कीजिए और कारण लिखिए:

अ $\sqrt{49}$ = 7 परिमेय $\frac{7}{1}$ ✓

ब $\sqrt{50}$ = $\sqrt{25 \times 2}$ = $5\sqrt{2}$ अपरिमेय $\frac{5\sqrt{2}}{1}$ ×

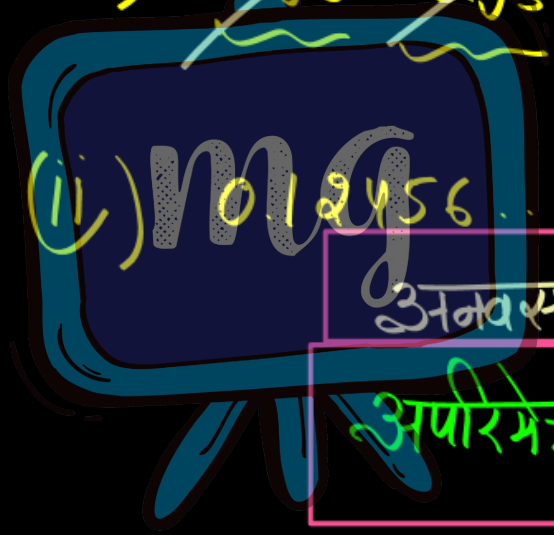
स 0.121212...1

सांत दशमलव प्रसार परिमेय

Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

(i) $2\sqrt{5} - 2\sqrt{5} + 3 = 3$



(ii) 0.12456...

अनवसानी दशमलव प्रसार

अपरिमेय

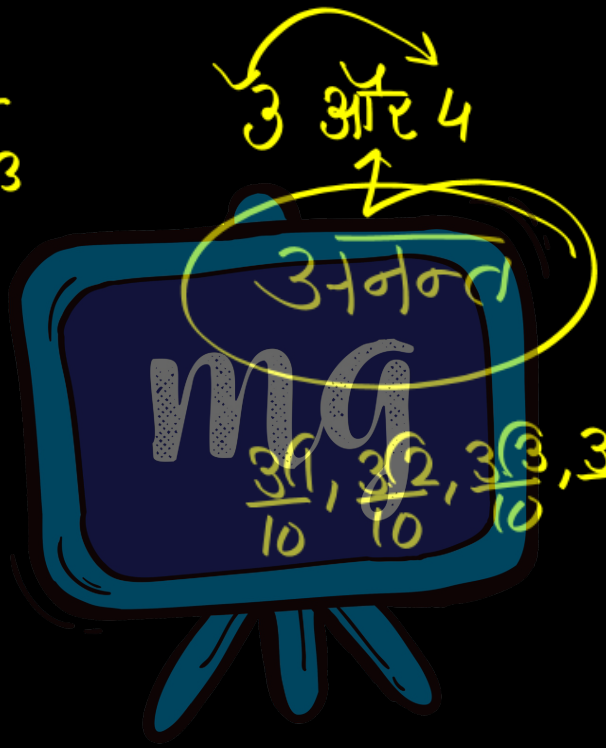
Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

$3.0000000\ldots\ldots 1$

$3.0000000\ldots\ldots 2$

$3.0000000\ldots\ldots 3$



$\frac{3(1)}{10}, \frac{3(2)}{10}, \frac{3(3)}{10}, \frac{3(4)}{10}, \frac{3(5)}{10}, \frac{3(6)}{10}$

Under CSR Support by
ipca | Foundation

missiongyan
LET'S LEARN TOGETHER

19. 3 और 4 के बीच में छः परिमेय संख्याएँ ज्ञात कीजिए।

6+1 = 7

$\frac{21}{7}, \frac{23}{7}, \frac{24}{7}, \frac{25}{7}$

$\frac{26}{7}, \frac{27}{7}$

हल :- Method - I

3 और 4

$\frac{3\times7}{1\times7}, \frac{4\times7}{1\times7}$

$\frac{21}{7}, \frac{28}{7}$

Under CSR Support by
ipca | Foundation

missiongyan
LET'S LEARN TOGETHER

$\frac{3}{5}$ और $\frac{4}{9}$ के बीच की 6 संख्याएँ

6+1=7

$\frac{10}{15}, \frac{11}{15}, \frac{12}{15}, \frac{13}{15}, \frac{14}{15}$

$\frac{15}{15}$

* हर समान नहीं ??

तो हर को समान करो।

$\frac{3\times3}{5\times3}, \frac{4\times5}{3\times5}$

$\frac{9}{15}, \frac{20}{15}$

Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

$\frac{9\times7}{15\times7}$ $\frac{20}{15\times7}\times7$



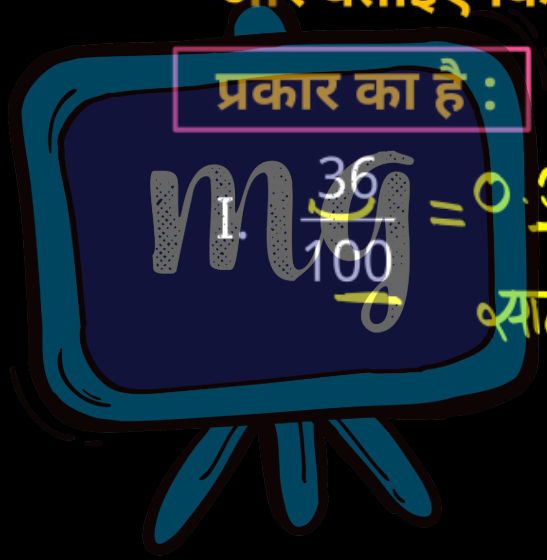
$\frac{63}{105}$ $\frac{140}{105}$

$\frac{64}{105}$ $\frac{65}{105}$ $\frac{66}{105}$ $\frac{67}{105}$ $\frac{68}{105}$ $\frac{69}{105}$

Under CSR Support by
ipca | Foundation

missiongyan
LET'S LEARN TOGETHER

20. निम्नलिखित भिन्नों को दशमलव रूप में लिखिए और बताइए कि प्रत्येक का दशमलव प्रसार किस प्रकार का है :



I. $\frac{36}{100} = 0.36$

सांत दशमलव प्रसार

Under CSR Support by
ipca | Foundation

missiongyan
LET'S LEARN TOGETHER

II. $\frac{1}{11} = 0.090909\ldots$

अनवसानी आवर्ती

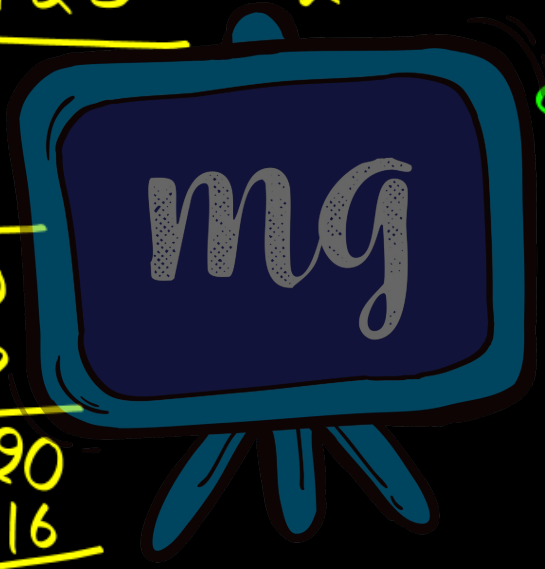
$$
\begin{array}{r|l}
11 & 0.090909\ldots \\
\hline
100 & \\
-99 & \\
\hline
100 & \\
-99 & \\
\hline
100 & \\
-99 & \\
\hline
100 & \\
-99 & \\
\hline
1 & \\
\vdots &
\end{array}
$$

Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

III. $4\frac{1}{8} = \frac{33}{8} = 4.125$

```
      4.125
   ____________
8 ) 33
    -32
    ---
     10
     -8
     --
     20
    -16
    ---
     40
```



सांत दशमलव प्रसार

Under CSR Support by ipca | Foundation

missiongyan LET'S LEARN TOGETHER

1000% ✗

21. निम्नलिखित को $\frac{p}{q}$ के रूप में व्यक्त कीजिए, p और q पूर्णांक है तथा $q \neq 0$ है:

I. $0.\bar{6}$

हल:- माना $x = 0.\bar{6}$

$x = 0.66\bar{6}$ — (i)

समी.(i) को 10 से गुणा करने पर

$10x = 10(0.\bar{6}66)$

$10x = 6.6\bar{6}$

1 संख्या पर बार
↳ 10 से गुणा

2 संख्या पर बार
↳ 100 से गुणा

Under CSR Support by ipca | Foundation

missiongyan LET'S LEARN TOGETHER

$x = \frac{2}{3}$

$10x = 6.66\overline{6}$ —(ii)

अतः $0.\overline{6}$ को $\frac{p}{q}$ के रूप में लिखा जा सकता है।

समी (ii) में से समी (i) को घटाने पर

$10x = 6.66\overline{6}$

$-\ x = 0.66\overline{6}$

$9x = 6$

$x = \frac{6}{9} = \frac{2}{3}$

Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

II. $0.\overline{001}$

$x = 0.\overline{001}$

1000

$x = 0.001001\overline{001}$ — (i)

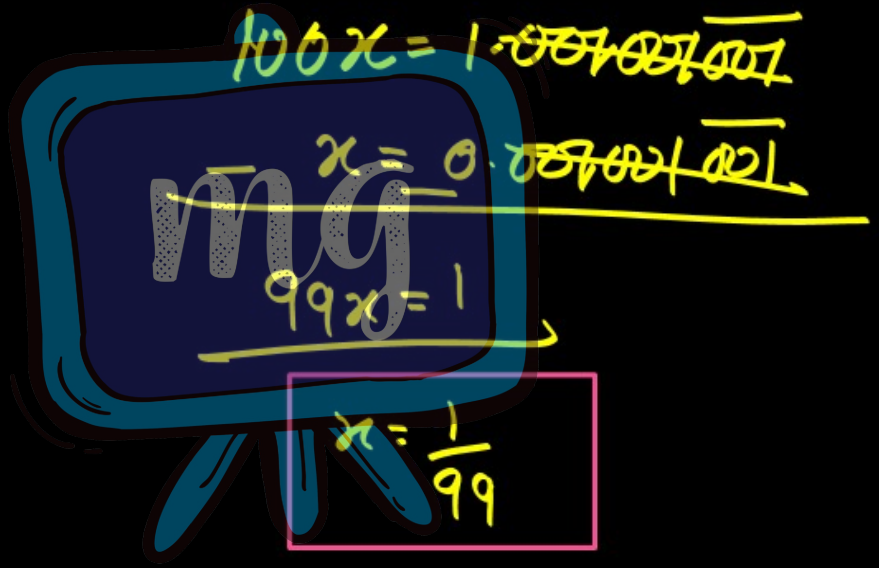
$1000x = 1000(0.001001\overline{001})$

$= 1.001\overline{001}$

$1000x = 1.001001\overline{001}$ — (ii)

Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER



Under CSR Support by ipca | Foundation

missiongyan® LET'S LEARN TOGETHER

22. बताइए कि निम्नलिखि संख्याओं में कौन-कौन संख्याएँ **परिमेय** और कौन-कौन संख्याएँ **अपरिमेय** हैं:

$\sqrt{\text{अभाज्य संख्याएँ}}$ → अपरिमेय

I. $\sqrt{23}$ → अपरिमेय

II. $\sqrt{225} = 15$ → परिमेय

III. 0.3796 = परिमेय (सांत दशमलव)

Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

IV. 7.478478 → परिमेय

सांत दशमलव



V. 1.101001000100001..... → अपरिमेय

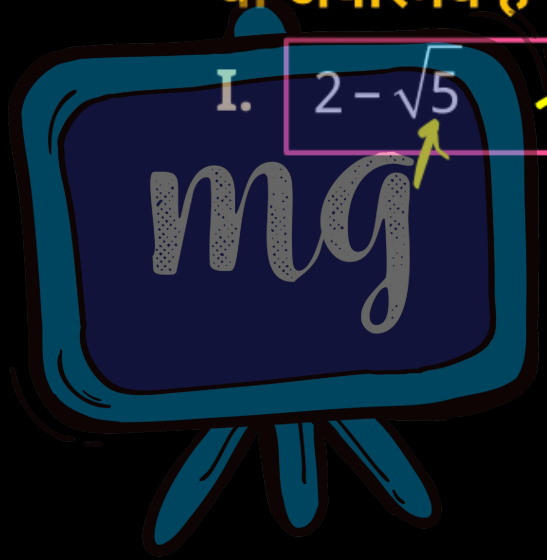
अनवसानी अनावर्ती

Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

23. नीचे दी गई संख्या में बताइए की संख्या परिमेय हैं या अपरिमेय हैं :

I. $2-\sqrt{5}$ — अपरिमेय



Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

II. $(3+\sqrt{23})-\sqrt{23}$

$3+\sqrt{23}-\sqrt{23}$

परिमेय



Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

III. $\frac{2\sqrt{7}}{7\sqrt{7}} = \frac{2}{7}$ परिमेय



Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

IV. $\frac{1}{\sqrt{2}}$ अपरिमेय



Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

V. 2π अपरिमेय



Under CSR Support by ipca | Foundation

missiongyan LET'S LEARN TOGETHER

$\sqrt{3}+\sqrt{2}$ X $\sqrt{3}+2$

X $\sqrt{5}$

$\sqrt{3}+\sqrt{3} = 2\sqrt{3}$

24. निम्नलिखित व्यंजकों में से प्रत्येक व्यंजक को सरल कीजिए :

I. $(3+\sqrt{3})(2+\sqrt{2})$

हल : $3(2+\sqrt{2})+\sqrt{3}(2+\sqrt{2})$

$= 6+3\sqrt{2}+2\sqrt{3}+\sqrt{3\times 2}$

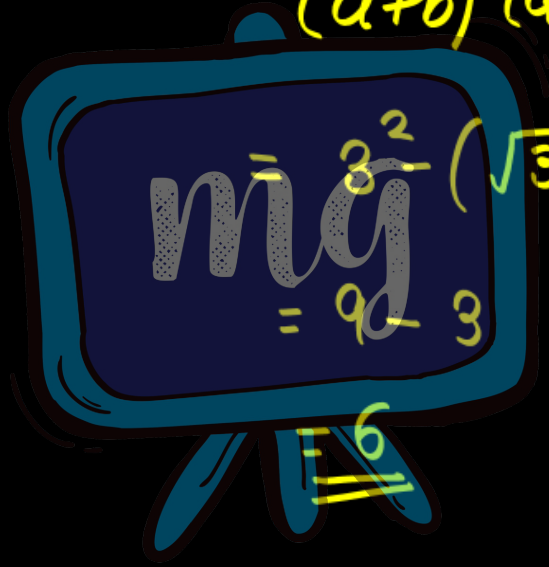
$= 6+3\sqrt{2}+2\sqrt{3}+\sqrt{6}$

Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

II. $(3+\sqrt{3})(3-\sqrt{3})$

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



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

$= 9 - 3$

$= 6$

Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

III. $(\sqrt{5}+\sqrt{2})^2$

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

$= (\sqrt{5})^2 + (\sqrt{2})^2 + 2\sqrt{5}\times\sqrt{2}$

$= 5+2+2\sqrt{10}$

$= 7+2\sqrt{10}$

Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

IV. $(\sqrt{5}+\sqrt{2})(\sqrt{5}-\sqrt{2})$



Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

25. निम्न के हरों का परिमेयकरण कीजिएः

I. $\frac{1}{\sqrt{7}}$



Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

II. $\frac{1}{\sqrt{7}-\sqrt{6}}$



Under CSR Support by ipca | Foundation

missiongyan® LET'S LEARN TOGETHER

26. ज्ञात कीजिए :

$(a^m)^n = a^{m \times n}$

I. $64^{\frac{1}{2}}$ $\quad (8^2)^{\frac{1}{2}} = 8^{2 \times \frac{1}{2}} = 8$

II. $32^{\frac{1}{5}} = (2^5)^{\frac{1}{5}} = 2^{5 \times \frac{1}{5}} = 2$

III. $125^{\frac{1}{3}} = 8$

$125 = 5^3$

$(5^3)^{\frac{1}{3}} = 5^{3 \times \frac{1}{3}} = 5$

Under CSR Support by
ipca | Foundation

missiongyan®
LET'S LEARN TOGETHER

27. ज्ञात कीजिए :

I. $9^{\frac{3}{2}}$

II. $32^{\frac{2}{5}}$

