

मिशन CTET / STET 2023



MATHS

सरलीकरण SIMPLIFICATION

पिछली परीक्षा में पूछे गए प्रश्नों के आधार पर

CTET / STET की सभी परीक्षाओं हेतु उपयोगी

हमारे **TOPIC EXPERT** के साथ

BY MATHS GURU



LIVE

06:00 PM



Q. $\left[5\left(8^{\frac{1}{3}} + 27^{\frac{1}{3}}\right)^3\right]^{\frac{1}{4}}$ का मान
क्या है?

Q. The value of $\left[5\left(8^{\frac{1}{3}} + 27^{\frac{1}{3}}\right)^3\right]^{\frac{1}{4}}$

$$\begin{aligned} & \left[5\left(8^{\frac{1}{3}} + 27^{\frac{1}{3}}\right)^3\right]^{\frac{1}{4}} \\ \Rightarrow & \left[5\left\{\left(2^3\right)^{\frac{1}{3}} + \left(3^3\right)^{\frac{1}{3}}\right\}^3\right]^{\frac{1}{4}} \\ \Rightarrow & \left[5\left(5\right)^3\right]^{\frac{1}{4}} \Rightarrow \left[5^4\right]^{\frac{1}{4}} = 5 \end{aligned}$$

- (a) 5 ✓
- (b) 5^2
- (c) 5^3
- (d) 5^4



Q. माना m और n पूर्ण संख्याएं हैं। $m^n = 121$ हो, तो n^m का मान होगा:

Q. Let m and n be whole numbers. $m^n = 121$, then the value of n^m will be:

Handwritten solution:

$$m^n = 121$$
$$(m)^n = (11)^2$$
$$m = 11$$
$$n = 2$$
$$(n)^m = (2)^{11} = 2^{10} \times 2 = 1024 \times 2 = 2048$$

(a) 512

(b)

1024

(c)

2048

(d)

4096



Question

Q. $(1 - \frac{1}{2})(1 - \frac{1}{3})(1 - \frac{1}{4}) \dots (1 - \frac{1}{n-1})(1 - \frac{1}{n})$ का मान होगा ?

Q. The value of $(1 - \frac{1}{2})(1 - \frac{1}{3})(1 - \frac{1}{4}) \dots (1 - \frac{1}{n-1})(1 - \frac{1}{n})$?

$$\begin{aligned} & \left(1 - \frac{1}{2}\right) \left(1 - \frac{1}{3}\right) \left(1 - \frac{1}{4}\right) \dots \left(1 - \frac{1}{n-1}\right) \left(1 - \frac{1}{n}\right) \\ &= \left(\frac{1}{2}\right) \left(\frac{2}{3}\right) \left(\frac{3}{4}\right) \dots \left(\frac{n-2}{n-1}\right) \left(\frac{n-1}{n}\right) \\ &= \frac{1}{n} \end{aligned}$$

- (a) $n/(n+1)$
- (b) $1/(5n)$
- (c) $1/(3n)$
- (d) $1/n$



Q. $\frac{5^{n+3} - 6 \times 5^{n+1}}{9 \times 5^n - 2^2 \times 5^n}$ के

बराबर है:

Q. $\frac{5^{n+3} - 6 \times 5^{n+1}}{9 \times 5^n - 2^2 \times 5^n}$ is

equal to:

(a)

91

(b)

19

(c)

10

(d)

1

$$\Rightarrow \frac{5^{(n+1)} \cdot 5^2 - 6 \times 5^{(n+1)}}{5^n (9 - 4)} = \frac{5^{(n+1)} [25 - 6]}{5^n (5)} = \frac{5^{(n+1)} (19)}{5^{(n+1)}} = 19$$



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Practice Question

Q. संख्यायें $\sqrt[3]{9}$, $\sqrt[4]{11}$ और $\sqrt[6]{17}$ में सबसे बड़ी संख्या है:

Q. The greatest number among the numbers

$\sqrt[3]{9}$, $\sqrt[4]{11}$ and $\sqrt[6]{17}$ is:

LCM
(3, 4, 6)

= 12

6561
6561

$\sqrt[3]{9} = \sqrt[12]{(9)^4} = \sqrt[12]{6561}$
 $\sqrt[4]{11} = \sqrt[12]{(11)^3} = \sqrt[12]{1331}$
 $\sqrt[6]{17} = \sqrt[12]{(17)^2} = \sqrt[12]{289}$

- (a) $\sqrt[3]{9}$
- (b) $\sqrt[4]{11}$
- (c) $\sqrt[6]{17}$
- (d) इनमें से कोई नहीं

None of these



7, 14, 21
7+14+21=77

Q. यदि 7 के तीन लगातार गुणजों का योग 777 है, तो सबसे छोटा गुणज होगा:

Q. If the sum of three consecutive multiples of 7 is 777, then the smallest multiple will be:

(5) $7x + (7x+7) + (7x+14) = 777$

\downarrow

7×36

$= 252$

$21x + 21 = 777$

$\Rightarrow 21(x+1) = 777$

$x+1 = 37$

$x = 36$

- (a) 252 ✓
- (b) 259
- (c) 272
- (d) 266



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Practice Question

Q. $\frac{519 \times 519 - 81 \times 81}{519 \times 519 + 2 \times 519 \times 81 + 81 \times 81}$ बराबर है:

Q. $\frac{519 \times 519 - 81 \times 81}{519 \times 519 + 2 \times 519 \times 81 + 81 \times 81}$ is equal

to:

$a = 519, b = 81$

$$\left[\frac{a^2 - b^2}{a^2 + 2ab + b^2} \right] \left(\frac{a-b}{a+b} \right)$$

$$\Rightarrow \frac{(a-b)(a-b)}{(a+b)^2} = \frac{(519-81)}{(519+81)}$$

$$\Rightarrow \frac{438}{600} = \frac{219}{300} = \frac{73}{100}$$

(a) $\frac{73}{200}$

(b) $\frac{73}{100}$

(c) $\frac{100}{78}$

(d) $\frac{200}{73}$

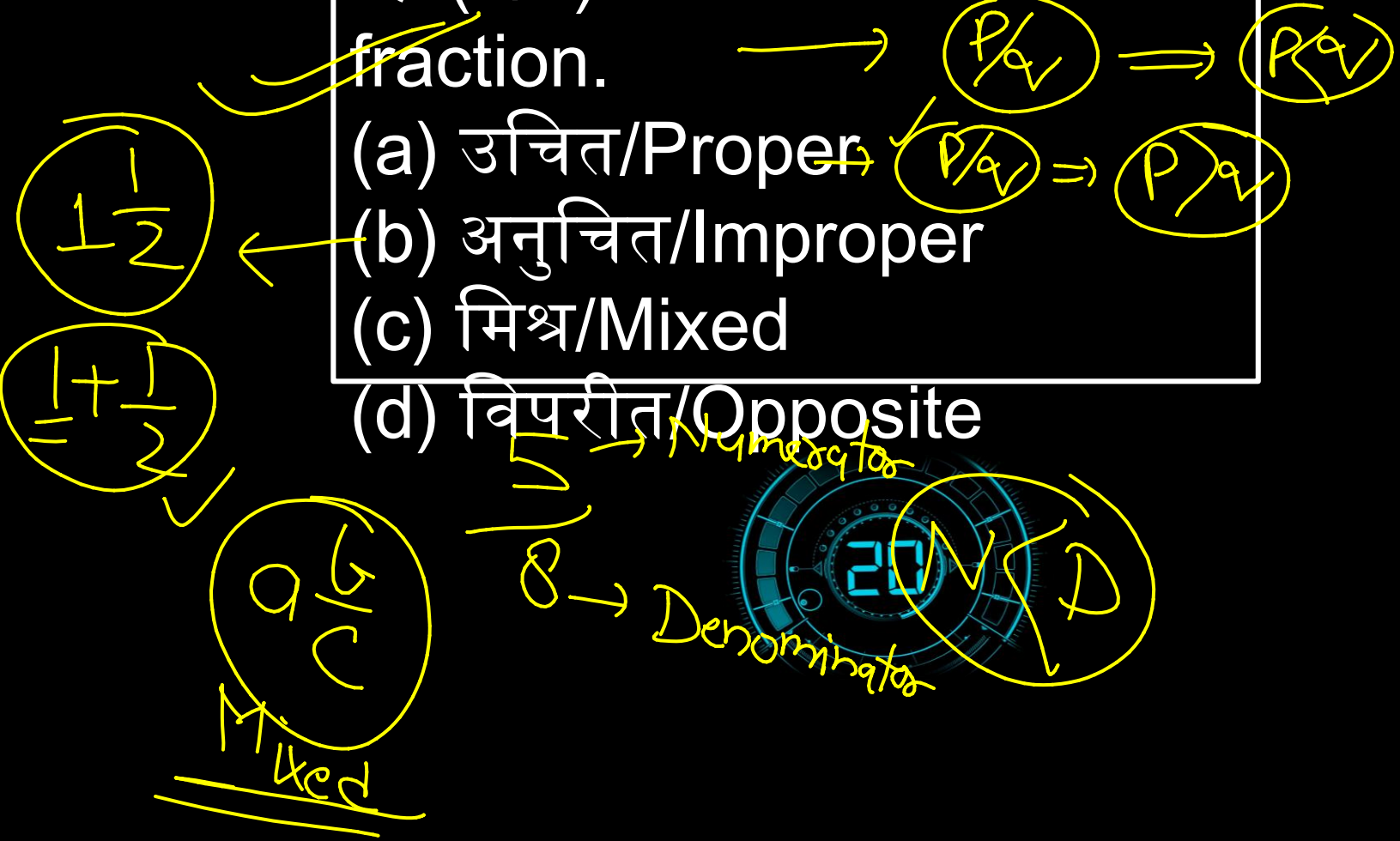


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Practice Question

Q. (5/8) एक भिन्न है।
Q. (5/8) is a fraction.

- (a) उचित/Proper
- (b) अनुचित/Improper
- (c) मिश्र/Mixed
- (d) विपरीत/Opposite





Q. $(-30) \times [33 + (-23)] + (-203) \div (-29)$ का मान होगा-

Q. The value of $(-30) \times [33 + (-23)] + (-203) \div (-29)$ will be-

$$\begin{aligned} &= (-300) + 7 \\ &= -293 \end{aligned}$$

(a) 295

(b) -
259

(c) -
592

(d) -
293



Q. सरल करें/ Simplify it:

$$3 \div \left[\left(\underline{8-5} \right) \div \left\{ \left(4-2 \right) \div \left(2 + \frac{8}{13} \right) \right\} \right]$$

$$3 \div \left[3 \div \left\{ (2) \div \frac{34}{13} \right\} \right]$$

$$3 \div \left[3 \div \left\{ 2 \times \frac{13}{34} \right\} \right]$$

$$3 \div \left[3 \times \frac{17}{13} \right] \Rightarrow 3 \times \frac{13}{17 \times 3} \Rightarrow \frac{13}{17}$$

✓ (a)
13/17

(b)
17/13

(c)
68/13

(d)
13/68



Q. $\sqrt{\frac{1.44 \times 0.81}{0.9 \times 3.6}}$ का मान ज्ञात कीजिये.

Q. Find the value of

$$\begin{aligned} & \sqrt{\frac{1.44 \times 0.81}{0.9 \times 3.6}} \\ &= \sqrt{\frac{144 \times 81}{9 \times 36} \times \frac{100 \times 100}{100 \times 100}} \\ &= \frac{12 \times 9}{6 \times 10} = \frac{6}{10} = 0.6 \end{aligned}$$

(a) 0.6

(b) 0.5

(c) 1

(d)

0.75



Q. 0.000216 का घनमूल होगा:

Q. cube root of 0.000216 will be:

$$\sqrt[3]{\frac{0.000216}{10^6}}$$

$$\sqrt[3]{\frac{216}{10^6}} = \sqrt[3]{\frac{6^3}{10^6}}$$

$$= \frac{(6^3)^{1/3}}{(10^6)^{1/3}} = \frac{6}{100} = 0.06$$

(a) 0.6

(b) 0.06

(c) 0.006

(d) इनमें से कोई नहीं

none of

these



Q. $\sqrt{0.01} + \sqrt{0.81} + \sqrt{1.21} + \sqrt{0.0009}$ का मान होगा:

Q. The value of $\sqrt{0.01} + \sqrt{0.81} + \sqrt{1.21} + \sqrt{0.0009}$ will be:

$$\begin{aligned}\sqrt{\frac{101}{100}} &= \frac{1}{10} = 0.1 \\ \sqrt{\frac{81}{100}} &= \frac{9}{10} = 0.9 \\ \sqrt{\frac{121}{100}} &= \frac{11}{10} = 1.1 \\ \sqrt{\frac{0009}{10^4}} &= \frac{3}{10^2} = 0.03\end{aligned}$$

$$\begin{array}{r} 0.1 \\ + 0.9 \\ + 1.1 \\ + 0.03 \\ \hline 2.13 \end{array}$$

- (a) 2.03
- (b) 2.1
- (c) 2.11
- (d) 2.13



Q. यदि $(14/21)=(x/3)=(6/y)$ हो, तो x और y के मान क्रमशः हैं?

Q. If $(14/21)=(x/3)=(6/y)$, then the values of x and y are respectively?

$$\frac{14}{21} = \frac{x}{3} = \frac{6}{y}$$



2, 9

$$x \frac{14}{21} = \frac{x}{3}$$

$$x = 2$$

$$y \frac{6}{y} = \frac{6}{2}$$
$$y = 9$$

- (a) 2, 9
- (b) 9, 2
- (c) 7, 9
- (d) 2.7



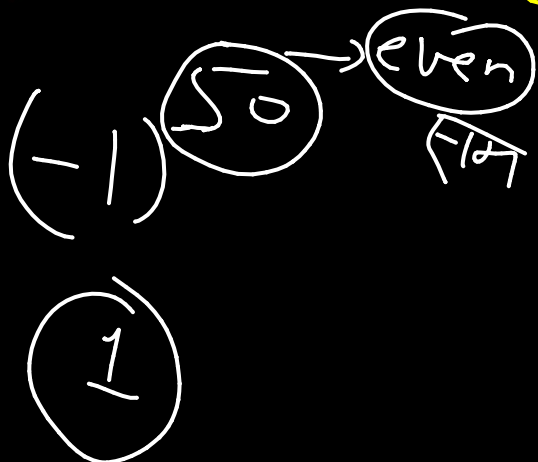
Q. यदि 13^{50} को 14 से भाग दिया जाये, तो शेषफल है-

Q. If 13^{50} is divided by 14, then the remainder is-

$$\begin{array}{r} 13^{50} \\ \underline{14} \\ (14-1)^{50} \\ \underline{14} \end{array}$$



$$\begin{aligned} (-1)^1 &= +1 \\ (-1)^3 &= -1 \end{aligned}$$



- (a) 13
- (b) 12
- (c) 1
- (d) -1

