



लक्ष्य RAILWAY 2026

RRB NTPC | RRB ALP TECHNICIAN | RRB GROUP-D

MATHS

SURDS & INDICES-01

सवाल ऐसा जो ग़दर मचा दे

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Live : 2:00 PM



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1. Find the value of $\sqrt{20^2 - 16^2}$
का मान ज्ञात करें।

(RRB RPF Const., 20/01/2019)

- (a) 14
- (b) 16
- (c) 18
- (d) 12

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

$$\sqrt{(20+16)(20-16)}$$

$$\sqrt{36 \times 4}$$

$$6 \times 2 = 12$$

$$a^0 = 1 \quad \boxed{a \neq 0}$$

$$a^m \times a^n = a^{m+n}$$

$$a^m \div a^n = a^{m-n}$$

$$(a^m)^n = a^{mn}$$

$$\left(\frac{a}{b}\right)^{-m} = \left(\frac{b}{a}\right)^m$$

$$a^m = a^n \Rightarrow \boxed{m=n}$$

2. Find the value of. $\left(\frac{1}{7}\right)^{-4} + \left(\frac{1}{9}\right)^{-4} + \left(\frac{1}{5}\right)^{-4}$

का मान ज्ञात करें।

(RRB RPF Const., 02/03/2025)

(a) 9596

(b) 9578

(c) 9587

(d) 9584

$$(7)^4 + (9)^4 + (5)^4$$

$$2401 + 6561 + 625$$

3. Find the value of the given expression.

दिए गए व्यंजक का मान ज्ञात कीजिए।

$$\left(\frac{1}{64}\right)^{-\frac{1}{3}}$$

(RRB Tech. Grade-3, 23/12/2024)

- (a) 2
- (b) 4
- (c) 2
- (d) 4

$$(64)^{\frac{1}{3}} = 4^{3 \times \frac{1}{3}} = 4$$

4. What is the value of $(0.000001)^{1/3}$?

$(0.000001)^{1/3}$ का मान क्या है?

(RRB ALP CBT-1, 26/11/2024)

- (a) 0.1
- (b) 0.000001
- ☒ (c) 0.01
- (d) 0.001

$$\left(\frac{1}{1000000}\right)^{1/3} = (10^{-6})^{1/3} = 10^{-2} = \frac{1}{100} = 0.01$$

5. Find the value of the given expression.

दिए गये व्यंजक का मान ज्ञात कीजिए।

$$\left(\frac{-2}{5}\right)^{-2} \times \left(\frac{-4}{5}\right)^4$$

(RRB Tech. Grade-3, 28/12/2024)

(a) $\frac{26}{25}$

(c) $\frac{64}{25}$

(b) $\frac{25}{64}$

(d) $\frac{25}{26}$

$$\left(\frac{5}{-2}\right)^2 \times \left(\frac{-4}{5}\right)^4$$

$$\frac{25}{4} \times \frac{-4 \times -4 \times -4 \times -4}{5 \times 5 \times 5 \times 5}$$

$$\frac{64}{25}$$

6. Find the value of the following.

निम्नलिखित का मान ज्ञात कीजिए।

$$\left[\left(\frac{3}{9} \right)^{-9} \times \left(\frac{9}{3} \right)^{-6} \times \left(\frac{1}{8} \right)^{-3} \right]^{-5}$$

(RRB RPF Const., 17/03/2025)

(a) $\left(\frac{5}{72} \right)^{14}$

(c) $\left(\frac{3}{82} \right)^{15}$

(b) $\left(\frac{72}{3} \right)^{17}$

(d) $\left(\frac{3}{72} \right)^{15}$

$$\left[\left(\frac{9}{3} \right)^9 \times \left(\frac{9}{3} \right)^{-6} \times \left(\frac{8}{1} \right)^3 \right]^{-5}$$

$$\left[\left(\frac{9}{3} \right)^3 \times (8)^3 \right]^{-5}$$

Hw.

7. Find the value of the following expression.

निम्नलिखित व्यंजक का मान ज्ञात कीजिए।

$$\frac{\sqrt{225}}{14} \times \frac{\sqrt{196}}{22} \times \frac{\sqrt{484}}{15} \times$$

(RRB NTPC, (2/2) / 2021)

(a) 14

~~(b) 1~~

(c) 2

(d) 3

$$\frac{\cancel{15}}{\cancel{14}} \times \frac{\cancel{14}}{\cancel{22}} \times \frac{\cancel{22}}{\cancel{15}}$$

8. Simplify expression. the following
निम्न व्यंजक को सरल कीजिए।

$$\sqrt{\frac{\sqrt{1875}}{\sqrt{3888}}} \times \frac{\sqrt{768}}{\sqrt{1200}}$$

(RRB NTPC CBT 2, (13/6) / 2022)

(a) $\frac{5}{6}$

(b) $\frac{\sqrt{5}}{3}$

(c) $\frac{\sqrt{5}}{6}$

(d) $\frac{5}{12}$

$$\sqrt{\frac{\cancel{25}^5 \sqrt{3}}{\cancel{36}^4 \sqrt{3}}} \times \frac{\cancel{4}^2 \sqrt{3}}{\cancel{20}^4 \sqrt{3}}$$

$$\sqrt{\frac{5}{9}} = \boxed{\frac{\sqrt{5}}{3}}$$

9. What is the value of the following?
निम्नलिखित का मान क्या है?

$$\sqrt{144} + \sqrt{0.04} - \sqrt{9} =$$

(RRB Tech. Grade-1, (19/12) / 2024)

- (a) 9.2
(b) 8.82
(c) 6.96
(d) 11.42

$$12 + 0.2 - 3$$

$$9.2$$

10. Simplify the following expression

निम्न व्यंजक को सरल कीजिए।

$$\sqrt{0.25} + 2\sqrt{0.0049} - 0.3\sqrt{0.09}$$

(RRB NTPC CBT ,09/05/2022)

(a) 0.1

(b) 5.05

(c) 0.55

(d) 2.73

$$0.5 + 2 \times 0.07 - 0.3 \times 0.3$$

$$0.5 + 0.14 - 0.09$$

0.73

11. If $\sqrt{15 \times 27 \times x} = 180$, then find the value of x .

यदि $\sqrt{15 \times 27 \times x} = 180$ है, तो x का मान ज्ञात कीजिए।

(RRB NTPC, 23 /0 2/20 21)

(a) 60

(b) 70

(c) 80

(d) 50

$$\sqrt{3 \times 5 \times 3 \times 9 \times x} = 180$$

$$\sqrt{5x} = 180 \div 3 = 60$$

$$\sqrt{5x} = 60$$

$$5x = 3600$$

$$x = 720$$

12. If $\sqrt{2116 \times \sqrt{48} \div x} = 92$, then find the value of x.

यदि $\sqrt{2116 \times \sqrt{48} \div x} = 92$ हो, तो x का मान ज्ञात कीजिए।

(RRB NTPC, 8 / 0 1/20 21)

- (a) 6
- (b) 2
- (c) 12
- (d) 3

H.W.

13. Find the value of n when $3^7 \times 3^{(3n+4)} = \frac{3^{11}}{3^5}$

n का मान ज्ञात कीजिए जब $3^7 \times 3^{(3n+4)} = \frac{3^{11}}{3^5}$ है।

(a) 2

(b) 5

(c) 4

(d) 3

$$\frac{1}{3^7} \times 3^{3n+4} = 3^6$$

$$3^{3n+4} = 3^{13}$$

$$3n+4=13$$

$$3n=9$$

14. If $4 \times 4^{(n+5)} = 256$ then what is the value of $5^{(n+4)}$?

यदि $4 \times 4^{(n+5)} = 256$ है, तो 5^{n+4} का मान क्या है?

(RRB Tech. Grade-3, (26/12) / 2024)

- (a) 25
- (b) 5
- (c) 1
- (d) 125

$$4 \times 4^{(n+5)} = 256$$

$$4^{(n+5)} = 4^3$$

$$n+5 = 3$$

$$n = -2$$

$$5^{-2+4}$$

$$5^2 = 25$$

15. Select the number that can come in place of the question mark (?) in the following equation?

उस संख्या का चयन कीजिए जो निम्नलिखित समीकरण में प्रश्न चिन्ह (?) के स्थान पर आ सकती है?

$$47^{7.5} \div 47^{\frac{3}{2}} \times 47^{-3} = (\sqrt{47})^?$$

(RRB NTPC, 05/03/2021)

(a) 6

(b) 4

(c) $2\frac{1}{2}$

(d) 5

$$47^{(7.5 - 1.5 - 3)} = (\sqrt{47})^?$$

$$47^3 = (\sqrt{47})^?$$

$$(\sqrt{47})^6 = (\sqrt{47})^?$$

$$6 = ?$$

16. Find the value of $26^{-19} \div 26^{18} \times 26^3$

$26^{-19} \div 26^{18} \times 26^3$ का मान ज्ञात कीजिए।

(RRB NTPC UG, (8/8) / 2025)

(a) 26^{-34}

(b) 26^{-45}

(c) 26^{-40}

(d) 26^{-35}

$$26^{-19-18+3}$$

$$26^{-34}$$

17. Find the possible value of x in the given equation.

दिए गए समीकरण में x का संभावित मान ज्ञात कीजिए।

$$\sqrt{\frac{x}{1-x}} + \sqrt{\frac{1-x}{x}} = \frac{25}{12}$$

(RRB NTPC, (2/2) / 2021)

(a) $\frac{12}{25}$ या $\frac{13}{25}$

(b) $\frac{8}{25}$ या $\frac{17}{25}$

(c) $\frac{19}{25}$ या $\frac{6}{25}$

(d) $\frac{9}{25}$ या $\frac{16}{25}$

H.W.

18. If $y^3 = 0.008$, then what is the value of y^5

यदि $y^3 = 0.008$ है, तो y^5 मान क्या है?

(RRB Tech. Grade-3, 28/12/2024)

(a) 0.0032

(b) 0.00032

(c) 0.032

(d) 0.000032

$$y^3 = \frac{8}{1000}$$

$$y^3 = \left(\frac{2}{10}\right)^3$$

$$y = \frac{2}{10} = 0.2$$

$$y^5 = (0.2)^5 = \left(\frac{2}{10}\right)^5$$

$$= \frac{32}{100000}$$

$$= 0.00032$$



PRASHANT SIR

REASONING

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