



Test RanKING

145. The sum of two positive numbers is 59 and their product is 564. The positive difference between them is:

दो धनात्मक संख्याओं का योग 59 है और उनका गुणनफल 564 है। उनके बीच का धनात्मक अंतर क्या है?

$$a > b$$

(RRB SECTION CONTROLLER 2025)

[A] 35

[B] 34

[C] 47

[D] 55

$$\begin{aligned} a + b &= 59 \\ 47 + 12 \end{aligned}$$

$$a - b = 47 - 12 = 35$$

$$\begin{aligned} ab &= 564 \\ &= 4 \times 141 \\ &= 4 \times 47 \times 3 \end{aligned}$$

146. The sum of two positive numbers is 88 and their product is 1927. The positive difference between them is:

दो धनात्मक संख्याओं का योगफल 88 है और उनका गुणनफल 1927 है। उनके बीच धनात्मक अंतर ज्ञात कीजिए। $a > b$

[RRB NTPC 12TH LEVEL CBT-1, 2026]

[A] 17

[B] 26

[C] 6

[D] 21

$$a + b = 88$$

$$a \cdot b = 1927$$

$$a - b = ?$$

$$\begin{array}{r} 76 \\ 76 \overline{) 149} \end{array}$$

$$\begin{aligned} (a-b) &= \sqrt{(a+b)^2 - 4ab} \\ &= \sqrt{88^2 - 4 \times 1927} \\ &= \sqrt{7744 - 7708} \\ &= \sqrt{36} \\ &= 6 \end{aligned}$$

147. The sum of the squares of two consecutive even natural numbers is 2180. The sum of the numbers is:

दो क्रमागत सम प्राकृत संख्याओं के वर्गों का योग 2180 है। संख्याओं का योग ज्ञात कीजिए।

(RRB NTPC GRADUATE LEVEL CBT-1 2026)

[A] 82

[C] 74

[B] 72

[D] 66

~~x $(x+2)$~~

~~$x^2 + (x+2)^2 = 2180$~~

$32+34$

sum = 2180
 $1024 + 1156$

$32^2 \leftarrow 1090 \rightarrow 34^2$

Trick

148. The sum of the squares of two consecutive odd natural numbers is 5002. The sum of the numbers is:

दो क्रमागत विषम प्राकृत संख्याओं के वर्गों का योगफल 5002 है। दोनों संख्याओं का योगफल ज्ञात कीजिए। $= (49+51)$

(RRB NTPC GRADUATE LEVEL CBT-1 2026)

[A] 112

~~[B] 100~~

[C] 96

[D] 110

5002

$2401 + 2601 =$



149. The sum of two numbers is 28 and their product is 175. What will be the sum of the reciprocals of those two numbers?

दो संख्याओं का योग 28 है और उनका गुणनफल 175 है। उन दोनों संख्याओं के व्युत्क्रमों का योग क्या होगा?

(RRB NTPC 2021)

[A] 0.16

[B] 25/7

[C] 0.35

[D] 0.18

$$\frac{1}{A} + \frac{1}{B} = \frac{B+A}{AB} = \frac{28}{175} = \frac{4}{25} = 0.16$$

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

Special series



Test RanKING

◆ $\frac{1}{1 \times 2} + \frac{1}{2 \times 3} + \frac{1}{3 \times 4} + \frac{1}{4 \times 5} + \frac{1}{5 \times 6} = \frac{1}{1} \left[\frac{1}{1} - \frac{1}{6} \right]$
 $= \frac{5}{6}$

lllll

$$\frac{1}{5 \times 8} + \frac{1}{8 \times 11} + \frac{1}{11 \times 14} + \dots + \frac{1}{32 \times 35} =$$

$$= \frac{1}{3} \left[\frac{8-5}{5 \times 8} + \frac{11-8}{8 \times 11} + \frac{14-11}{11 \times 14} + \dots + \frac{35-32}{32 \times 35} \right]$$

$$= \frac{1}{3} \left[\frac{1}{5} - \frac{1}{8} + \frac{1}{8} - \frac{1}{11} + \frac{1}{11} - \frac{1}{14} + \dots + \frac{1}{32} - \frac{1}{35} \right]$$

$$= \frac{1}{3} \left[\frac{1}{5} - \frac{1}{35} \right] = \frac{1}{3} \times \frac{6}{35} = \frac{2}{35}$$

$$= \frac{1}{\text{Common diff}} \left[\frac{1}{\text{first no}} - \frac{1}{\text{last no}} \right]$$



Test Rank

150. $\frac{1}{1*2} + \frac{1}{2*3} + \frac{1}{3*4} + \dots + \frac{1}{99*100} = ?$

[A] $\frac{99}{100}$
 [B] $\frac{98}{99}$
 [C] $\frac{100}{101}$
 [D] $\frac{97}{100}$

$$\frac{1}{1} \left[\frac{1}{1} - \frac{1}{100} \right]$$

$$= \frac{99}{100}$$

151. If $\frac{1}{1 \times 2} + \frac{1}{2 \times 3} + \frac{1}{3 \times 4} + \dots + \frac{1}{n(n+1)} = \frac{249}{250}$ then what is the value of n?

यदि $\frac{1}{1 \times 2} + \frac{1}{2 \times 3} + \frac{1}{3 \times 4} + \dots + \frac{1}{n(n+1)} = \frac{249}{250}$ है तो n का मान ज्ञात करो।

[A] 299

✓ [B] 249

[C] 250

[D] 248

$$1 - \frac{1}{\cancel{250}} = \frac{249}{250}$$

152. $\frac{1}{3*7} + \frac{1}{7*11} + \frac{1}{11*15} + \dots + \frac{1}{899*903} = ?$

[A] $\frac{21}{509}$

[B] $\frac{18}{403}$

[C] $\frac{25}{301}$

[D] $\frac{29}{31}$

$$\begin{aligned} & \frac{1}{4} \left[\frac{1}{3} - \frac{1}{903} \right] \\ &= \frac{1}{4} \times \frac{(301-1)75}{903} \\ &= \frac{25}{301} \end{aligned}$$

153. $\frac{1}{20} + \frac{1}{30} + \frac{1}{42} + \frac{1}{56} + \frac{1}{72} + \frac{1}{90} + \frac{1}{110} + \frac{1}{132} = ?$

$$\frac{1}{4 \times 5} + \frac{1}{5 \times 6} + \frac{1}{6 \times 7} + \dots + \frac{1}{11 \times 12}$$

$$= \left[\frac{1}{4} - \frac{1}{12} \right]$$

$$= \frac{\cancel{2}}{\cancel{12}} = \frac{1}{6}$$

154. $\frac{1}{15} + \frac{1}{35} + \frac{1}{63} + \dots + \frac{1}{195} = ?$

[SSC MTS 2025]

[A] $3/15$

[C] $4/15$

[B] $2/15$

[D] $6/15$

$$\frac{1}{3 \times 5} + \frac{1}{5 \times 7} + \frac{1}{7 \times 9} + \dots + \frac{1}{13 \times 15}$$

$$= \frac{1}{2} \left[\frac{1}{3} - \frac{1}{15} \right]$$
$$= \frac{1}{2} \times \frac{4}{15} = \frac{2}{15}$$

159. Simplify: $55\frac{1}{8} + 55\frac{3}{8} + 55\frac{5}{8} + 55\frac{7}{8}$.

$55\frac{1}{8}$ + $55\frac{3}{8}$ + $55\frac{5}{8}$ + $55\frac{7}{8}$ को सरल कीजिए।

[A] 224

[B] 222

[C] 226

[D] 220

$$55 \times 4 + \left(\frac{1+3+5+7}{8} \right)$$

$$220 + 2$$

$$= 222$$

155. $5\frac{1}{2} + 55\frac{1}{6} + 555\frac{1}{12} + 5555\frac{1}{20} + 55555\frac{1}{30} = ?$

SSC CHSL PRE 2025

[A] ~~$61726\frac{5}{6}$~~

[B] $61725\frac{5}{6}$

[C] ~~$61725\frac{6}{7}$~~

[D] ~~$61726\frac{6}{7}$~~

$\left[5 \times 12345 + \frac{5}{6} \right]$



$\frac{1}{1 \times 2} + \frac{1}{2 \times 3} + \dots + \frac{1}{5 \times 6} = \frac{1}{1} - \frac{1}{6} = \frac{5}{6}$

156. $\frac{1}{2} + \frac{1}{6} + \frac{1}{12} + \frac{1}{20} + \dots \dots \frac{1}{90} = ?$

[A] $\frac{9}{10}$

[B] $\frac{7}{11}$

[B] $\frac{4}{5}$

[D] $\frac{8}{13}$

157. $666\frac{1}{3} + 666\frac{1}{15} + 666\frac{1}{35} + \dots + 666\frac{1}{143} = ?$

$666\frac{1}{3} + 666\frac{1}{15} + 666\frac{1}{35} + \dots + 666\frac{1}{143} = ?$

[A] $3997\frac{1}{13}$ [B] $3996\frac{6}{13}$

[C] $3996\frac{7}{13}$ [D] $3997\frac{6}{13}$

$$\underline{666 \times 6} + \frac{6}{13}$$

$$\frac{1}{1 \times 3} + \frac{1}{3 \times 5} + \frac{1}{5 \times 7} + \dots + \frac{1}{11 \times 13} = \frac{1}{2} \times \left(\frac{1}{1} - \frac{1}{13} \right) = \frac{6}{13}$$

158. The value of $\frac{3}{1^2 \cdot 2^2} + \frac{5}{2^2 \cdot 3^2} + \frac{7}{3^2 \cdot 4^2} + \frac{9}{4^2 \cdot 5^2} + \dots + \frac{19}{9^2 \cdot 10^2}$ is:

[A] $\frac{1}{100}$

[B] $\frac{99}{100}$

[C] 1

[D] $\frac{11}{100}$

$$\frac{1}{1^2} - \frac{1}{2^2} + \frac{1}{2^2} - \frac{1}{3^2} + \dots + \frac{1}{9^2} - \frac{1}{10^2}$$
$$= 1 - \frac{1}{100} = \frac{99}{100}$$

$$\frac{5}{2^2 \times 3^2} = \frac{3^2 - 2^2}{2^2 \times 3^2} = \frac{1}{2^2} - \frac{1}{3^2}$$

BODMAS

From left to right direction →

V

$\bar{a}$

Vineculum
bar

line bracket

B

$\{ () \}$

Bracket

$\{ () \}$

O

of
 $\frac{1}{2}$

Order

D

$\div$

Division

M

$\times$

multiplication

A

$+$

Addition

S

$-$

Subtraction

lllll

$$\underbrace{5 \div 5}_{1} \div 5 \div 5 \div 5 = \frac{1}{5 \times 5 \times 5} = \frac{1}{125}$$

$$7 - 5 \div \left(\frac{3}{2}\right) + 6$$

$$7 - 5 \times \frac{2}{3} + 6 = 13 - \frac{10}{3} = \frac{29}{3}$$



Test RanKING

$$\frac{\frac{a}{b}}{x} = \frac{a}{b \times x}$$

$$\frac{x}{\frac{a}{b}} = x \times \frac{b}{a}$$

$$\left(\frac{\frac{a}{b}}{\frac{x}{y}} \right) = \frac{a}{b} \times \frac{y}{x}$$

या

$$\frac{a}{b} \div \frac{x}{y}$$



Test RanKING

$$\underbrace{4 \div 4}_{1} \div 4 = \frac{1}{4}$$



Test RanKING

160. The simplified value of $178 - 7 \times (3 + 17) + 22$ is:
 $178 - 7 \times (3 + 17) + 22$ का सरलीकृत मान ज्ञात कीजिए।
(RRB NTPC GRADUATE LEVEL CBT-1 2026)

[A] 66

[B] 58

[C] 67

[D] 60

$178 - 140 + 22$



161. Evaluate: $16 + 20 \div 4 - 2 \times 3$

$16 + (20 \div 4) - 2 \times 3$ का मान ज्ञात कीजिए।

(RRB NTPC GRADUATE LEVEL CBT-1 2026)

[A] 18

[B] 17

[C] 14

[D] 15

$$\begin{aligned} &16 + 5 - 6 \\ &= 15 \end{aligned}$$

162. **Evaluate:** निम्नलिखित का मान निकालिए:

$$\frac{1}{\left(\frac{2}{3}\right) \times \left(\frac{3}{5}\right)} \div \frac{8}{39}$$

[RRB Technician Grade 1 2024]

[A] $3\frac{16}{19}$

[B] $3\frac{17}{23}$

[C] $3\frac{28}{33}$

[D] $3\frac{65}{76}$

$$\begin{aligned} & \left(\frac{1}{\frac{19}{15}}\right) \div \frac{8}{39} \\ &= \frac{15}{19} \times \frac{39}{8} \text{ Ans} \end{aligned}$$

163. The simplified value of $\frac{16}{45} \times (98 + 20) + 97$ is.

$\frac{16}{45} \times (98 + 20) + 97$ का सरलीकृत मान ज्ञात कीजिए।

(RRB Section Controller 2025)

[A] $\frac{6262}{45}$

[C] $\frac{6256}{45}$

[B] $\frac{6253}{45}$ ✓

[D] $\frac{6257}{45}$

$\frac{16 \times 118}{45} + 97$

$\dots 87 \dots 5$

164. Find the value of $\left[(35 \div 5) \times \left\{\frac{12}{6} + \frac{25}{2} \times (9 - 7)\right\}\right]$?
 $\left[(\underline{35 \div 5}) \times \left\{\frac{12}{6} + \frac{25}{2} \times (\underline{9 - 7})\right\}\right]$ का मान ज्ञात कीजिये?

(RRB RPF SI 2024)

[A] 170

[B] 172

[C] 174

✓ [D] 189

165. Simplify the following.

निम्नलिखित को सरल कीजिए।

$$112 \div [16 \div 8 \times \{18 + 12 - (3 + 10 - (4 + 7))\}]$$

(RRB NTPC 12TH LEVEL CBT-1 2026)

[A] 3

[B] 4

[C] 11

[D] 2 ✓

112 ÷ 56

166. The simplified value of $81 - [54 - (56 \div 8 - (18 - 32 \div 4) \div 4)]$ is:
 $81 - [54 - (56 \div 8 - (18 - 32 \div 4) \div 4)]$ का सरलीकृत मान ज्ञात कीजिए।
(RRB Section Controller 2025)

[A] $\frac{63}{2}$
[C] $\frac{71}{2}$

[B] $\frac{65}{2}$
[D] $\frac{73}{2}$

$$81 - \left[54 - \frac{7 - \frac{5}{2}}{2} \right]$$

$27 + \frac{9}{2}$

167. If $28 \times 8 \times 988 \div \sqrt{2704} = y + 649$, then find y .

यदि $28 \times 8 \times 988 \div \sqrt{2704} = y + 649$, तो y ज्ञात कीजिए।

(RRB RPF SI 2024), (RRB NTPC GRADUATE LEVEL CBT-1 2026)

[A] ~~3617~~

[B] ~~3609~~

[C] ~~3607~~

[D] ~~3608~~

$$28 \times 8 \times 988 \div 52 - 649 = y$$

$$28 \times 152 - 649 = y$$

$$① \times ⑧ - ①$$

$$⑦ = y$$

168. Evaluate: $(-9) - (-56) \div (-14) + (-3) \times 7$

$(-9) - (-56) \div (-14) + (-3) \times 7$ का मान ज्ञात कीजिए।

(RRB NTPC GRADUATE LEVEL CBT-1 2026)

[A] -37

[B] -36

[C] -34 $-13-21$

[D] -33

169. Simplify: $2 - [2 - 3\{2 - (2 - 4)\} \div 2]$.

$2 - [2 - 3\{2 - (2 - 4)\} \div 2]$ को सरलीकृत कीजिए।

[RRB ALP CBT-1 2025]

[A] 8

[C] 2

[B] 4

[D] 6

170. The simplified value of $\frac{\left(\frac{17}{21}\right)}{\left(\frac{17}{3}\right)} \div \left(\frac{2}{6} \times \frac{2}{6} + \frac{2}{7}\right) + \frac{3}{7} \div \frac{20}{12}$ of $\frac{12}{7}$ is:

निम्नलिखित का सरलीकृत मान ज्ञात कीजिए।

$$\frac{\left(\frac{17}{21}\right)}{\left(\frac{17}{3}\right)} \div \left(\frac{2}{6} \times \frac{2}{6} + \frac{2}{7}\right) + \frac{3}{7} \div \frac{20}{12} \text{ of } \frac{12}{7}$$

[RRB Paramedical 2025]

[A] $\frac{3}{10}$

$$\frac{3}{7} \div \frac{20}{7}$$

[B] $\frac{4}{9}$

[C] $\frac{2}{15}$

[D] $\frac{10}{7}$

$$\frac{1}{9} \times \frac{9}{7} = \frac{1}{7}$$

$$\begin{aligned} & \frac{1}{7} \times \frac{63}{25} + \frac{3}{20} \\ &= \frac{36+15}{100} = \frac{51}{100} \end{aligned}$$