



DSSSB + SSC MTS

DSSSB PRT, TGT & PGT



दफ्तरी बैच

Part(A+B)

SCHOLAR BATCH

MATHS

Simplification (सरलीकरण)

Part -2



LIVE 10-04-2024 08:00 AM



1. The value of $15 \times 14 - 30 + (3^2 + 17)$ is:

$15 \times 14 - 30 + (3^2 + 17)$ का मान है:

(a) 154

(b) 266

(c) 124

(d) 206

$$\begin{aligned} & 210 - 30 + 26 \\ & 210 - 4 \\ & 206 \end{aligned}$$

$$\begin{aligned} & \Rightarrow 236 - 30 \\ & 206 \end{aligned}$$



2. Solve it $79 + [37 - \{45 - (1 - 36 \div 6 \times 8)\}] = ?$

इसे हल करें $79 + [37 - \{45 - (1 - 36 \div 6 \times 8)\}] = ?$

(a) 33

(b) 24

(c) 59

(d) 41

$$79 + [37 - \{45 - (1 - \frac{36}{6} \times 8)\}]$$

$$79 + [37 - \{45 - (-47)\}]$$

$$79 + [37 - \{45 + 47\}]$$

$$79 + [37 - 92]$$

$$79 - 55 = 24$$

3. Solve the given equation
दिए गए समीकरण को हल करें

$$2 - [2 - (2 - 2(2 + 2))] = ?$$

(a) -4

(b) 6

(c) 4

(d) -6

$$2 - [2 - (2 - 8)]$$

$$2 - [2 - (-6)]$$

$$2 - [2 + 6]$$

$$2 - 8 \Rightarrow -6$$

4. The value of $\left\{\frac{3}{5} \times [3 + \{3 + (11 + 5 + 6)\}]\right\}$ is:

$\left\{\frac{3}{5} \times [3 + \{3 + (11 + 5 + 6)\}]\right\}$ का मान है:

(a) $10\frac{2}{5}$

(b) $12\frac{6}{5}$

(c) $11\frac{4}{5}$

(d) $16\frac{4}{5}$

$\frac{3}{5} \times 28$

$\rightarrow \frac{84}{5}$

$\rightarrow 16\frac{4}{5}$

5. Simplify सरल3

$$24 \times 3 - 5 \times \frac{1}{3} \{ [-5(5-2)] \div 10 \}$$

(a) 121.5

(b) 69.5

(c) 74.5

(d) 31.5

$$72 - 5 \times \frac{1}{3} \{ -15 \div 10 \}$$

$$72 - 5 \times \frac{1}{3} \times \frac{-15}{10} \times 2$$

$$72 + \frac{5}{2} \rightarrow 72 + 2.5 \\ = 74.5$$

$$(4 \times 6) + 9 \div 3 \times 8 - (7 \times 20 \times 20)$$

$$24 + \frac{9^3}{3} \times 8 - 7 \times 20 \times 20$$

$$24 + 24 - 2800$$

$$48 - 2800 = -2752$$



6. $\{40 - (90 \div 5 \times \overline{16 - 8 \div 2 \div 3})\} = ?$

(a) 16

(b) 28

(c) 14

(d) 64

$$7. 56 \div \frac{1}{3} \{ 15 + 12 - (9 + 6 - \overline{5 + 7}) \} = ?$$

(a) 9

(b) 8

(c) 12

(d) 7

$$56 \div \left(\frac{1}{3} \times 24 \right)$$

$$56 \div 8 = 7$$

$$56 \div \frac{1}{3} (24)$$

$$56 \div 8 = 7$$

BODMAS

↓
↓
Division

Bracket

8. $144 \div [40 - \{37 - (25 - 112 \div \overline{7 \times 4})\}]$

~~(a) 4~~

(b) 8

(c) 2

(d) 6

$144 \div [40 - \{37 - (25 - 112 \div 28)\}]$

$144 \div [40 - \{37 - (25 - 4)\}]$
21
16
24

$144 \div 24 = 6$



9. $18 \div \left[\frac{1}{8} \{ 11 + 16 - (10 + 7 - \overline{6 + 8}) \} \right] = ?$

(a) 6

(b) 9

(c) 18

(d) 3

$$18 \div \left[\frac{1}{8} \{ 27 - (\underbrace{17 - 14}_3) \} \right]$$

24

$$18 \div \left[\frac{1}{8} \times 24 \right]$$

$$18 \div 3$$

$$\# \quad (a+b)^2 = a^2 + b^2 + 2ab$$

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

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

$$(a+b)^3 = \underbrace{a^3 + b^3} + 3ab(a+b) = a^3 + b^3 + 3a^2b + 3ab^2$$

$$(a-b)^3 = \underbrace{a^3 - b^3} - 3ab(a-b) = a^3 - b^3 - 3a^2b + 3ab^2$$

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

$$\underline{(a+b)^2 - (a-b)^2} = \underline{4ab}$$

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

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

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

10. The value of $(\sqrt{2} + \sqrt{3})(\sqrt{2} - \sqrt{3})$ is equal to:

$(\sqrt{2} + \sqrt{3})(\sqrt{2} - \sqrt{3})$ का मान बराबर है:

(a) -1

(b) 2

(c) 3

(d) -3

$$a^2 - b^2$$

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

$$2 - 3$$

$$= -1$$



11. Find the value of the following equation:

निम्नलिखित समीकरण का मान ज्ञात कीजिए:

$$\frac{(a+b)^2 - (a-b)^2}{2ab}$$

$$\Rightarrow \frac{4ab}{2ab}$$

$$\Rightarrow 2$$

$$\frac{(469+144)^2 - (469-144)^2}{2(469 \times 144)} = ?$$

3252

(a) -2

(b) -1

(c) 1

(d) 2

6132

$$\begin{aligned} 469 &= a \\ 144 &= b \end{aligned}$$



12. Find the value of: $\frac{(82+28)^2 - (82-28)^2}{82 \times 28}$

इसका मान ज्ञात कीजिए: $\frac{(82+28)^2 - (82-28)^2}{82 \times 28}$

(a) 220

(b) 4

(c) 8

(d) 110

$$\begin{aligned} 82 &= a \\ 28 &= b \end{aligned}$$

$$\frac{(a+b)^2 - (a-b)^2}{ab}$$

$$\Rightarrow \frac{a^2 + b^2 + 2ab - (a^2 + b^2 - 2ab)}{ab}$$

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

$$\begin{aligned} (a+b)^2 - (a-b)^2 &\Rightarrow 4ab \\ (a+b)^2 + (a-b)^2 &= 2(a^2 + b^2) \end{aligned}$$

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

$$\Rightarrow \frac{4ab}{ab}$$



13. $\left[\frac{1.93 \times 19.3 - 2.07 \times 20.7}{193 - 207} \right]$ equals to:

$\left[\frac{1.93 \times 19.3 - 2.07 \times 20.7}{193 - 207} \right]$ इसके बराबर है:

(a) 0.40

(b) 4.00

(c) 40

(d) 0.04

$$a = 1.93$$

$$b = 2.07$$

$$\frac{a \times a - b \times b}{a - b}$$

$$a - b$$

$$\frac{a^2 - b^2}{(a - b)}$$

$$\Rightarrow \frac{(a+b)(\cancel{a-b})}{\cancel{(a-b)}}$$

$$\Rightarrow a + b \Rightarrow \begin{array}{r} 1.93 \\ 2.07 \\ \hline 4.00 \end{array}$$



14. Find the value of $73 \times 73 + 42 \times 42 - 2 \times 73 \times 42$.

$\frac{73 \times 73}{a} + \frac{42 \times 42}{b} - \frac{2 \times 73 \times 42}{a \times b}$ का मान ज्ञात कीजिये।

(a) 961

(b) 676

(c) 981

(d) 861

RRB RPF-SI-16/01/2019 (Shift-III)

$$a^2 + b^2 - 2ab$$

$$(a-b)^2$$

$$(73-42)^2$$

$$(31)^2 = 961$$



15. Find the value of $[(525+252)^2 - (525-252)^2] / (525 \times 252)$.

$$777^2 - 273^2$$

$[(525+252)^2 - (525-252)^2] / (525 \times 252)$ का मान ज्ञात कीजिये

- (a) 3
- (b) 4
- (c) 5
- (d) 6

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



16. If $(\sqrt{5} + 1)^2 = a + b\sqrt{5}$, then find a, b where $(a > b)$.

यदि $(\sqrt{5} + 1)^2 = a + b\sqrt{5}$, तो a, b खोजें जहां $(a > b)$ ।

(a) 4, 2

(b) 6, 2

(c) 6, 4

(d) 8, 6

$$(\sqrt{5})^2 + 1 + 2\sqrt{5} = a + b\sqrt{5}$$

$$6 + 2\sqrt{5} = a + b\sqrt{5}$$

$$b = 2$$

$$a = 6$$



17. If $(a + b\sqrt{2})^2 = 19 + 6\sqrt{2}$, then a is equal to:

यदि $(a + b\sqrt{2})^2 = 19 + 6\sqrt{2}$, तो a बराबर है:

(a) 4

(b) 3

(c) 2

(d) 1