

सरलीकरण | Simplification

Type-4 (BODMAS)

1. $11\frac{1}{2} + 17\frac{3}{4} - 5\frac{1}{5} - 2\frac{1}{10} = ?$

(A) $21\frac{17}{20}$ (B) $21\frac{15}{20}$

(C) $21\frac{19}{20}$ (D) $21\frac{13}{20}$

2. If $M = \frac{3}{7} \div \frac{6}{5} \times \frac{2}{3} + \frac{1}{5} \times \frac{3}{2}$ and

$N = \frac{2}{5} \times \frac{5}{6} \div \frac{1}{3} + \frac{3}{5} \times \frac{2}{3} \div \frac{3}{5}$, then find $\frac{M}{N} = ?$

$M = \frac{3}{7} \div \frac{6}{5} \times \frac{2}{3} + \frac{1}{5} \times \frac{3}{2}$ तथा

$N = \frac{2}{5} \times \frac{5}{6} \div \frac{1}{3} + \frac{3}{5} \times \frac{2}{3} \div \frac{3}{5}$ हो, तो ज्ञात कीजिये $\frac{M}{N} = ?$

(A) $\frac{111}{350}$ (B) $\frac{109}{350}$

(C) $\frac{113}{350}$ (D) $\frac{107}{350}$

3. The value of $\frac{1 + \frac{1}{2}}{1 - \frac{1}{2}} \div \frac{4}{7} \left(\frac{2}{5} + \frac{3}{10} \right)$ of $\frac{1 + \frac{1}{3}}{\frac{1}{2} - \frac{1}{3}}$ is—

(A) $\frac{2}{3}$ (B) $\frac{3}{2}$ (C) $18\frac{3}{8}$ (D) $37\frac{1}{2}$

4. The simplified value of

$\left(\frac{7}{5} \div \frac{7}{10} \text{ of } \frac{3}{4} \right) \div \frac{4}{9} - \left(\frac{7}{16} \div 10\frac{1}{2} \times 7\frac{1}{5} \right) \times \frac{5}{12}$ is :—

$\left(\frac{7}{5} \div \frac{7}{10} \text{ of } \frac{3}{4} \right) \div \frac{4}{9} - \left(\frac{7}{16} \div 10\frac{1}{2} \times 7\frac{1}{5} \right) \times \frac{5}{12}$ का सरलीकृत

मान है :-

(A) $\frac{47}{8}$ (B) $\frac{39}{4}$ (C) $\frac{49}{8}$ (D) $\frac{41}{4}$

5. $\frac{\left(\frac{3^2}{3} \right)^2 - \left(\frac{2^1}{2} \right)^2}{\left(\frac{4^3}{4} \right)^2 - \left(\frac{3^1}{3} \right)^3} \div \frac{3\frac{2}{3} - 2\frac{1}{2}}{4\frac{3}{4} - 3\frac{1}{3}} = ?$

(A) $\frac{37}{97}$ (B) $\frac{74}{97}$

(C) $1\frac{23}{97}$ (D) None of these

6. A student was asked to find the value of

$9\frac{4}{9} \div 11\frac{1}{3} \text{ of } \frac{1}{6} + \left(1\frac{1}{3} \times 1\frac{4}{5} \div \frac{3}{5} \right) \times 2\frac{1}{6} \text{ of } \frac{2}{3} + \frac{4}{2} \text{ of } \frac{2}{3}$

His answer was $19\frac{1}{4}$. What is the difference between his answer and the correct answer? एक विद्यार्थी को

$9\frac{4}{9} \div 11\frac{1}{3} \text{ of } \frac{1}{6} + \left(1\frac{1}{3} \times 1\frac{4}{5} \div \frac{3}{5} \right) \times 2\frac{1}{6} \text{ of } \frac{2}{3} + \frac{4}{2} \text{ of } \frac{2}{3}$ का

मान निकालने के लिए कहा गया। उसका उत्तर $19\frac{1}{4}$ आया। उसके उत्तर और सही उत्तर में कितना अंतर है ?

(A) $9\frac{11}{12}$ (B) $6\frac{2}{3}$

(C) $7\frac{1}{2}$ (D) $6\frac{1}{3}$

7. The value of $8 - 3 \div 6$ of $2 + \left(4 \div 4 \text{ of } \frac{1}{4} \right) \div 8$

$+ \left(4 \times 8 \div \frac{1}{4} \right) \times \frac{1}{8}$ is :

$8 - 3 \div 6$ of $2 + \left(4 \div 4 \text{ of } \frac{1}{4} \right) \div 8 + \left(4 \times 8 \div \frac{1}{4} \right) \times \frac{1}{8}$

का मान ज्ञात करें।

(A) $-\frac{7}{4}$ (B) $\frac{7}{4}$

(C) $-\frac{97}{4}$ (D) $\frac{97}{4}$

8. The value of $\frac{40 - \frac{3}{4} \text{ of } 32}{37 - \frac{3}{4} \text{ of } (34 - 6)}$ is :

$\frac{40 - \frac{3}{4} \text{ of } 32}{37 - \frac{3}{4} \text{ of } (34 - 6)}$ का मान ज्ञात करें।

- (A) 1 (B) 0
(C) $-\frac{1}{2}$ (D) $\frac{1}{2}$

9. The value of $\left(5\frac{1}{4} \div \frac{3}{7} \text{ of } \frac{1}{2}\right) \div \left(5\frac{1}{9} - 7\frac{7}{8} \div 9\frac{9}{20}\right) \times$

$\frac{11}{21} - \left(5 \div 2 \text{ of } \frac{1}{2}\right)$ is :

$\left(5\frac{1}{4} \div \frac{3}{7} \text{ of } \frac{1}{2}\right) \div \left(5\frac{1}{9} - 7\frac{7}{8} \div 9\frac{9}{20}\right) \times \frac{11}{21} -$

$\left(5 \div 2 \text{ of } \frac{1}{2}\right)$ का मान ज्ञात करें।

- (A) 0 (B) $\frac{35}{24}$
(C) -2 (D) $\frac{15}{28}$

10. The value of $1 - 3 \div 6 \text{ of } 2 + (4 + 4 \text{ of } \frac{1}{4}) \div 8 + (4$

$\times 8 \div \frac{1}{4}) \times \frac{1}{8}$ is:

$1 - 3 \div 6 \text{ of } 2 + (4 \div 4 \text{ of } \frac{1}{4}) \div 8 + (4 \times 8 \div \frac{1}{4}) \times \frac{1}{8}$

का मान ज्ञात करें।

- (A) $\frac{69}{4}$ (B) $-\frac{7}{4}$
(C) $-\frac{69}{4}$ (D) $\frac{7}{4}$

11. The value of

$\frac{5 - 2 \div 4 \times [5 - (3 - 4)] + 5 \times 4 \div 2 \text{ of } 4}{4 + 4 + 8 \text{ of } 2 \times (8 - 5) \times 2 \div 3 - 8 \div 2 \text{ of } 8}$ is

का मान बताइए ?

- (A) $\frac{9}{8}$ (B) $\frac{9}{4}$
(C) $\frac{15}{32}$ (D) $\frac{89}{4}$

12. What is the simplified value of the following?
निम्नलिखित का सरलीकृत मान क्या है ?

$$\frac{9 \div \frac{3}{7} \text{ of } (9 + 6 \times \sqrt{4 - 2}) + \left[\frac{1}{5} \div \frac{7}{25} - \left\{\frac{5}{8} + \frac{6}{16}\right\}\right]}{24 + \sqrt{16 - 10} + 36 \div (5 + 20 + 4 - 1)}$$

- (A) $\frac{40}{7}$ (B) $\frac{5}{56}$
(C) $\frac{7}{40}$ (D) $\frac{51}{56}$

13. $5\frac{5}{6} + \left[2\frac{2}{3} - \left\{3\frac{3}{4} \left(3\frac{4}{5} + 9\frac{1}{2}\right)\right\}\right]$ is equal to:

$5\frac{5}{6} + \left[2\frac{2}{3} - \left\{3\frac{3}{4} \left(3\frac{4}{5} + 9\frac{1}{2}\right)\right\}\right]$ बराबर है-

- (A) $\frac{44}{7}$ (B) 7
(C) $\frac{43}{6}$ (D) $\frac{22}{3}$

14. The value of $\left(1\frac{1}{3} + 2\frac{6}{7} \text{ of } 5\frac{3}{5}\right) \times$

$\left(6\frac{2}{5} \div 4\frac{1}{2} \text{ of } 5\frac{1}{3}\right) + \left(\frac{3}{4} \times 2\frac{2}{3} \div \frac{5}{9} \text{ of } 1\frac{1}{5}\right) = k,$

where k lies between:

$\left(1\frac{1}{3} + 2\frac{6}{7} \text{ of } 5\frac{3}{5}\right) \times \left(6\frac{2}{5} \div 4\frac{1}{2} \text{ of } 5\frac{1}{3}\right) +$

$\left(\frac{3}{4} \times 2\frac{2}{3} \div \frac{5}{9} \text{ of } 1\frac{1}{5}\right) = k$ है, जहाँ k का मान _____ के

मध्य स्थित है।

- (A) 0.07 and 0.08
(B) 0.007 and 0.008
(C) 0.0007 and 0.0008
(D) 0.7 and 0.8

15. The value of

$$9 \div \left\{ \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{6} \div \left(\frac{3}{4} - \frac{1}{3} \right) \text{ of } \frac{2}{9} \right\} \text{ is:}$$

का मान ज्ञात करें।

- (A) $\frac{540}{173}$ (B) $\frac{340}{173}$
 (C) $\frac{480}{173}$ (D) $\frac{2540}{173}$

16. What is the value of $\frac{5.6 \times 0.36 + 0.42 \times 3.2}{0.8 \times 2.1}$?

$$\frac{5.6 \times 0.36 + 0.42 \times 3.2}{0.8 \times 2.1} \text{ का मान क्या है ?}$$

- (A) 2 (B) 1
 (C) 3 (D) $\frac{3}{2}$

17. Find the value of $2.1 + 2.25 \div [63 - \{7.5 \times 8 + (13 - 2.5 \times 5)\}]$.

$2.1 + 2.25 \div [63 - \{7.5 \times 8 + (13 - 2.5 \times 5)\}]$ का मान बताइए।

- (A) 2.8 (B) 2.9
 (C) 3.0 (D) 3.1

18. The value of

$$\left[5\frac{4}{9} \div \left(\frac{11}{4} - \frac{13}{6} \right) \right]^3 + \left[7\frac{3}{11} \text{ of } 8\frac{4}{5} \div 1\frac{5}{7} - \frac{4}{3} \right]^2 \text{ is:}$$

$$\left[5\frac{4}{9} \div \left(\frac{11}{4} - \frac{13}{6} \right) \right]^3 + \left[7\frac{3}{11} \text{ of } 8\frac{4}{5} \div 1\frac{5}{7} - \frac{4}{3} \right]^2 \text{ का मान ज्ञात$$

कीजिए।

- (A) $\frac{1}{81}$ (B) $\frac{1}{61}$
 (C) $\frac{1}{71}$ (D) $\frac{1}{91}$

19. The value of

$$75\frac{3}{5} \div \left[15 \div 3 \text{ of } 5 + 7 \div \frac{1}{14} - \left(78 \div 3\frac{1}{3} \right) \right] \text{ is:}$$

$$75\frac{3}{5} \div \left[15 \div 3 \text{ of } 5 + 7 \div \frac{1}{14} - \left(78 \div 3\frac{1}{3} \right) \right] \text{ का मान ज्ञात$$

करो ?

- (A) 1 (B) 2
 (C) 5 (D) 0

20. The value of $\frac{7 - [4 \times 3(2 - 2 \times 2 + 5) - 8] \div 5}{2 \div 2 \text{ of } (4 + 4 \div 4 \text{ of } 4)}$ is :

$$\frac{7 - [4 \times 3(2 - 2 \times 2 + 5) - 8] \div 5}{2 \div 2 \text{ of } (4 + 4 \div 4 \text{ of } 4)} \text{ का मान ज्ञात कीजिए।}$$

- (A) 26 (B) $25\frac{1}{2}$
 (C) $8\frac{1}{2}$ (D) 24

MATHS With PAWAN RAO

SOLUTIONS

1. (C) $11\frac{1}{2} + 17\frac{3}{4} - 5\frac{1}{5} - 2\frac{1}{10} = 28 + \frac{5}{4} - 7 - \frac{3}{10}$
 $= 21 + \frac{19}{20} = 21\frac{19}{20}$

2. (C) $M = \frac{3}{7} \div \frac{6}{5} \times \frac{2}{3} + \frac{1}{5} \times \frac{3}{2}$
 $= \frac{3}{7} \times \frac{5}{6} \times \frac{2}{3} + \frac{3}{10} = \frac{50+63}{210} = \frac{113}{210}$

$N = \frac{2}{5} \times \frac{5}{6} \div \frac{1}{3} + \frac{3}{5} \times \frac{2}{3} \div \frac{3}{5}$
 $= \frac{2}{5} \times \frac{5}{6} \times 3 + \frac{3}{5} \times \frac{2}{3} \times \frac{5}{3} = \frac{5}{3}$

So, $\frac{M}{N} = \frac{\frac{113}{210}}{\frac{5}{3}} = \frac{113}{350}$

3. (B) $1 + \frac{1}{2} \div \frac{4}{7} \left(\frac{2}{5} + \frac{3}{10} \right) \text{ of } \frac{1}{2} + \frac{1}{3}$
 $\frac{1}{1 - \frac{1}{2}} = 2$
 $= 3 + \frac{4}{7} \left(\frac{7}{10} \right) \text{ of } \frac{5}{1} = 3 + \frac{2}{5} \text{ of } 5 = \frac{3}{2}$

4. (A) $\left(\frac{7}{5} + \frac{7}{10} \text{ of } \frac{3}{4} \right) \div 9 - \left(\frac{7}{16} + 10 \frac{1}{2} \times 7 \frac{1}{5} \right) \times \frac{5}{12}$
 $= \left(\frac{7}{5} + \frac{21}{40} \right) \div 9 - \left(\frac{7}{16} + \frac{2}{21} \times \frac{36}{5} \right) \times \frac{5}{12}$
 $= \frac{8}{3} \times \frac{9}{4} - \frac{3}{10} \times \frac{5}{12} = 6 - \frac{1}{8} = \frac{47}{8}$

5. (B) $\frac{a^2 - b^2}{c^2 - d^2} \times \frac{c - d}{a - b} \Rightarrow \frac{a + b}{c + d}$

6.(A) Correct answer =

$9\frac{4}{9} \div 11\frac{1}{3} \text{ of } \frac{1}{6} + \left(1\frac{1}{3} \times 1\frac{4}{5} + \frac{3}{5} \right) \times 2\frac{1}{6} \text{ of } \frac{2}{3} \div$
 $\frac{4}{2} \text{ of } \frac{2}{3} = \frac{85}{9} + \frac{17}{9} + \left[\frac{4}{3} \times \frac{9}{5} \times \frac{5}{3} \right] \times \frac{13}{9} \div \frac{4}{3}$
 $= 5 + 4 \times \frac{39}{36} = \frac{84}{9}$

So Required difference = $19\frac{1}{4} - \frac{84}{9} = \frac{119}{12}$
 $= 9\frac{1}{12}$

7. (D) $8 - 3 \div 6 \text{ of } 2 + (4 + 4 \text{ of } \frac{1}{4}) \div 8 + (4 \times 8 \text{ of } \frac{1}{4})$

$8 - 3 + 6 \times 2 + (4 + 4 \text{ of } \frac{1}{4}) \div 8 + \left(\frac{32 \times 4}{8} \right)$

$8 - 3 + 12 \times 4 + 8 + 16$

$8 - 3 + 12 + \frac{1}{2} + 16$

$8 - \frac{1}{4} + \frac{1}{2} + 16$

$24 + \frac{1}{4}$

$\frac{96+1}{4} = \frac{97}{4}$

8. (A) $\frac{40 - \frac{3}{4} \times 32}{37 - \frac{3}{4} \times 28} = \frac{40 - 24}{37 - 21} = \frac{16}{16} = 1$

9. (C) $\left(\frac{21}{4} \div \frac{3}{14} \right) \div \left(\frac{46}{9} - \frac{63}{8} \times \frac{20}{189} \right) \frac{11}{21} - 5$

$\frac{49}{2} + \left[\frac{46}{9} - \frac{5}{6} \right] \frac{11}{21} - 5$

$= \frac{49}{2} \times \frac{18}{77} \times \frac{11}{21} - 5$

$= 3 - 5 = -2$

10.(A) $1 - 3 \div 12 + (4 \div (1)) \div 8 + (4 \times 8 \times 4) \times \frac{1}{8}$

$= 1 - \frac{1}{4} + \frac{1}{2} + 16$

$\Rightarrow \frac{4 - 1 + 2 + 64}{4} = \frac{69}{4}$

11. (A)

$$12. (B) \quad 9 \div \frac{3}{7} \text{ of } (9 + 6 \times 2) + \left[\frac{1}{5} \times \frac{25}{7} - (1) \right]$$

$$\frac{24 + 6 + 36 \div 9}{}$$

$$\frac{9 \div \frac{3}{7} \text{ of } 21 + \frac{5}{7} - \frac{7}{7}}{4 + 4}$$

$$\Rightarrow \frac{9 + 9 - \frac{2}{7}}{8} \Rightarrow \frac{1 - \frac{2}{7}}{8} \Rightarrow \frac{5}{8} \Rightarrow \frac{5}{56}$$

$$13. (B) \quad \frac{35}{6} + \left[\frac{8}{3} - \left\{ \frac{15}{4} \left[\frac{19}{5} \div \frac{19}{2} \right] \right\} \right]$$

$$\frac{35}{6} + \left[\frac{8}{3} - \frac{15}{4} \times \frac{2}{5} \right]$$

$$= \frac{35}{6} + \frac{8}{3} - \frac{3}{2}$$

$$= \frac{35 + 16 - 9}{6} = \frac{42}{6} = 7$$

$$14. (B) \quad \left(1\frac{1}{3} \div 2\frac{6}{7} \text{ of } 5\frac{3}{5} \right) \times \left(6\frac{2}{5} \div 4\frac{1}{2} \text{ of } 5\frac{1}{3} \right) \div$$

$$\left(\frac{3}{4} \times 2\frac{2}{3} \div \frac{5}{9} \text{ of } 1\frac{1}{5} \right) = k$$

$$\left(\frac{4}{3} \div \frac{20}{7} \text{ of } \frac{28}{5} \right) \times \left(\frac{32}{5} \div \frac{9}{2} \text{ of } \frac{16}{3} \right) \div \left(\frac{3}{4} \times \frac{8}{3} \div \frac{5}{9} \text{ of } \frac{6}{5} \right)$$

$$= \left(\frac{4}{3} \div 16 \right) \times \left(\frac{32}{5} \div 24 \right) \div \left(2 \div \frac{2}{3} \right)$$

$$= \left(\frac{1}{12} \right) \times \left(\frac{4}{15} \right) \div (3)$$

$$= \frac{4}{12 \times 15} \times \frac{1}{3} = \frac{1}{135} = 0.0074$$

$$15. (A) \quad 9 \div \left[\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{6} \div \left(\frac{5}{12} \times \frac{2}{9} \right) \right]$$

$$= 9 \div \left[\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{6} \times \frac{12 \times 9}{10} \right]$$

$$= 9 \div \left[\frac{5}{6} + \frac{1}{4} + \frac{9}{5} \right] = 9 \div \left[\frac{50 + 15 + 108}{60} \right]$$

$$= 9 \div \left[\frac{173}{60} \right] = 9 \times \frac{60}{173} = \frac{540}{173}$$

$$16. (A) \quad \frac{(5.6 \times 0.36) + (0.42 \times 3.2)}{0.8 \times 2.1}$$

$$= \frac{.8 \times 2.1(1.2 + 0.8)}{0.8 \times 2.1}$$

$$= 1.2 + .8 = 2$$

$$17. (C) \quad 2.1 + 2.25 \div [63 - \{7.5 \times 8 + (13 - 2.5 \times 5)\}]$$

$$= 2.1 + 2.25 \div [63 - 60.5]$$

$$= 2.1 + \frac{2.25}{2.50} = 3.0$$

$$18. (A) \quad \left[5\frac{4}{9} \div \left(\frac{11}{4} - \frac{13}{6} \right)^2 \right] \div \left[7\frac{3}{11} \text{ of } 8\frac{4}{5} \div 1\frac{5}{7} - \frac{4}{3} \right]^2$$

$$= \left(\frac{49}{9} \div \frac{49}{144} \right) \div \left[\frac{80}{11} \times \frac{44}{5} \times \frac{7}{12} - \frac{4}{3} \right]^2$$

$$= 16 \div \left[\frac{112 - 4}{3} \right]^2$$

$$= \frac{16}{36 \times 36} = \frac{1}{81}$$

$$19. (A) \quad \frac{378}{5} \div \left[15 \div 15 + 7 \times 14 - \frac{234}{10} \right]$$

$$\frac{378}{5} \div \left[1 + 98 - \frac{234}{10} \right]$$

$$\frac{378}{5} \div \left[\frac{990 - 234}{10} \right]$$

$$\frac{378}{5} \div \frac{756}{10}$$

$$\frac{378}{5} \div \frac{10}{756} \Rightarrow \frac{756}{756} = 1$$

$$20. (B) \quad \frac{7 - [4 + 3(2 - 2 \times 2 + 5) - 8] \div 5}{2 \div 2 \text{ of } (4 + 4 \div 4 \text{ of } 4)}$$

$$= \frac{7 - [4 + 3(2 - 4 + 5) - 8] \div 5}{2 \div 2 \text{ of } \left(4 + \frac{1}{4} \right)}$$

$$= \frac{7 - [4 + 3(3) - 8] \div 5}{2 \div 2 \times \frac{17}{4}}$$

$$= \frac{7 - [5] \div 5}{2 \times \frac{17}{17}} = \frac{7 - 1}{2} = \frac{6}{2} = 3$$

$$= \frac{7 - [5] \div 5}{2 \times \frac{17}{17}} = \frac{7 - 1}{2} = \frac{6}{2} = 3$$

$$= \frac{6 \times 17}{4} = \frac{51}{2} = 25\frac{1}{2}$$