

Simplification worksheet for class 7

Simplification Questions for Class 7 with Answers (Solved examples)

(1)  $16+8 \div 4-2 \times 3$

Sol. According to the '**BODMAS**' rule we have to perform division first followed by multiplication , addition and subtraction.

$$\begin{aligned} 16+8 \div 4-2 \times 3 &=16+2-2 \times 3 && \text{(performing division)} \\ &=16+2-6 && \text{(performing multiplication)} \\ &=18-6 && \text{(performing addition)} \\ &= 12 \end{aligned}$$

(2)  $23 - [23 - \{23 - (23 - \overline{23 - 23})\}]$

Sol. First we have to remove vinculum (bar) , this implies

$$\begin{aligned} 23 - [23 - \{23 - (23 - \overline{23 - 23})\}] &= 23 - [23 - \{23 - (23 - 0)\}] \\ &= 23 - [23 - \{23 - 23\}] && \text{(removing small brackets)} \\ &= 23 - [23 - 0] && \text{(removing curly braces)} \\ &= 23-23 && \text{(removing big brackets)} \\ &=0 \end{aligned}$$

(3)  $25 - \frac{1}{2} \{5 + 4 - (3 + 2 - \overline{1 + 3})\}$

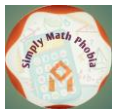
Sol.  $25 - \frac{1}{2} \{5 + 4 - (3 + 2 - \overline{1 + 3})\} = 25 - \frac{1}{2} \{5 + 4 - (3 + 2 - 4)\}$

$$\begin{aligned} &\text{(removing bar)} \\ &= 25 - \frac{1}{2} \{5 + 4 - 1\} && \text{(removing small brackets)} \\ &= 25 - \frac{1}{2} \times 8 && \text{(removing curly braces)} \\ &=25-4 && \text{(performing multiplication)} \\ &=21 \end{aligned}$$

(4)  $4 + \frac{1}{5}[(-10 \times (25 - \overline{13 - 3})) \div (-5)]$

Sol.  $4 + \frac{1}{5}[(-10 \times (25 - \overline{13 - 3})) \div (-5)] = 4 + \frac{1}{5}[(-10 \times (25 - 10)) \div (-5)]$

$$\begin{aligned} &\text{(removing vinculum)} \\ &= 4 + \frac{1}{5}[(-10 \times (15)) \div (-5)] \\ &= 4 + \frac{1}{5}[(-150) \div (-5)] && \text{(removing small brackets)} \end{aligned}$$



$$\begin{aligned} &= 4 + \frac{1}{5} \times 30 \\ &= 4 + 6 \\ &= 10 \end{aligned}$$

(removing big brackets)  
(performing multiplication)

**(5)  $8 - [28 \div \{34 - (36 - 18 \div 9 \times 8)\}]$**

Sol.  $8 - [28 \div \{34 - (36 - 18 \div 9 \times 8)\}] = 8 - [28 \div \{34 - (36 - 2 \times 8)\}]$  [solving division]

$$\begin{aligned} &= 8 - [28 \div \{34 - (36 - 16)\}] && \text{[Performing multiplication]} \\ &= 8 - [28 \div \{34 - 20\}] && \text{[Removing parentheses]} \\ &= 8 - [28 \div 14] && \text{[Removing braces]} \\ &= 8 - 2 && \text{[Removing square brackets]} \\ &= 6 \end{aligned}$$

**(6)  $16 - 2 \div 7 + 6 \times 2$**

Sol.  $16 - 2 \div 7 + 6 \times 2 = 16 - \frac{2}{7} + 6 \times 2$

$$\begin{aligned} &= 16 - \frac{2}{7} + 12 \\ &= 28 - \frac{2}{7} \\ &= \frac{196 - 2}{7} = \frac{194}{7} \\ &= 27\frac{5}{7} \end{aligned}$$

**(7)  $197 - [9\{42 + (56 - \overline{8 + 9})\} + 108]$**

Sol.  $197 - [9\{42 + (56 - \overline{8 + 9})\} + 108] = 197 - [9\{42 + (56 - 17)\} + 108]$  [Removing vinculum]

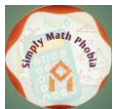
$$= 197 - [9\{42 + 39\} + 108]$$
 [removing innermost brackets]

$$= 197 - [(9 \times 81) + 108]$$
 [Removing braces]

$$\begin{aligned} &= 197 - [9 + 108] && \text{[removing big brackets]} \\ &= 197 - 117 \\ &= 80 \end{aligned}$$

**(8)  $25 - \frac{1}{2} \{5 + 4 - (3 + 2 - 1 + 3)\}$**

Sol.



$$\begin{aligned} &= 25 - \frac{1}{2} \{5 + 4 - 7\} \\ &= 25 - \frac{1}{2} \{9 - 7\} \\ &= 25 - \frac{1}{2} \times 2 \\ &= 25 - 1 \\ &= 24 \end{aligned}$$

**9)  $27 - [38 - \{46 - (15 - 13 - 2)\}]$**

Sol.  $27 - [38 - \{46 - (15 - 13 - 2)\}] = 27 - [38 - \{46 - (15 - 15)\}]$   
 $= 27 - [38 - \{46 - 0\}]$   
 $= 27 - [38 - 46]$   
 $= 27 - [38 - 46]$   
 $= 27 - (-8)$   
 $= 27 + 8$   
 $= 35$

**10)  $36 - [18 - \{14 - (15 - 4 \div 2 \times 2)\}]$**

Sol.  $36 - [18 - \{14 - (15 - 4 \div 2 \times 2)\}] = 36 - [18 - \{14 - (15 - 2 \times 2)\}]$   
 $= 36 - [18 - \{14 - (15 - 4)\}]$   
 $= 36 - [18 - \{14 - 11\}]$   
 $= 36 - [18 - \{14 - 11\}]$   
 $= 36 - [18 - 3]$   
 $= 36 - 15$   
 $= 21$

**11)  $10 - [(5 + 7) \div \{18 - (20 - 10 \div 5 \times 2)\}]$**

Sol.  $10 - [(5 + 7) \div \{18 - (20 - 10 \div 5 \times 2)\}] = 10 - [(5 + 7) \div \{18 - (20 - 2 \times 2)\}]$   
 $= 10 - [(5 + 7) \div \{18 - (20 - 4)\}]$   
 $= 10 - [(5 + 7) \div \{18 - 16\}]$   
 $= 10 - [(5 + 7) \div 2]$   
 $= 10 - [12 \div 2]$   
 $= 10 - 4$   
 $= 6$

**12)  $25 \div \{13 + 3 \times [7 - (8 \div 4 + 1)]\}$**

Sol.  $25 \div \{13 + 3 \times [7 - (8 \div 4 + 1)]\} = 25 \div \{13 + 3 \times [7 - (2 + 1)]\}$   
 $= 25 \div \{13 + 3 \times [7 - 3]\}$   
 $= 25 \div \{13 + 3 \times 4\}$   
 $= 25 \div \{13 + 12\}$   
 $= 25 \div 25$   
 $= 1$



**13)  $6 \times (7 - 2 \div 4) + 3$**

Sol.  $6 \times (7 - 2 \div 4) + 3 = 6 \times (7 - 0.5) + 3$   
 $= 6 \times (7 - 0.5) + 3$   
 $= 6 \times 6.5 + 3$   
 $= 39 + 3$   
 $= 42$

**14)  $4 + 6 \times \{8 - [12 - (3 + 2) \div 4]\}$**

Sol.  $4 + 6 \times \{8 - [12 - (3 + 2) \div 4]\} = 4 + 6 \times \{8 - [12 - 5 \div 4]\}$   
 $= 4 + 6 \times \{8 - [12 - 1.25]\}$   
 $= 4 + 6 \times \{8 - 10.75\}$   
 $= 4 + 6 \times \{-2.75\}$   
 $= 4 + (-16.5)$   
 $= -12.5$

**15)  $9 + \{6 \div [(8 - 4) \times 2] - 1\}$**

Sol.  $9 + \{6 \div [(8 - 4) \times 2] - 1\} = 9 + \{6 \div [4 \times 2] - 1\}$   
 $= 9 + \{6 \div 8 - 1\}$   
 $= 9 + \{0.75 - 1\}$   
 $= 9 + \{-0.25\}$   
 $= 9 + \{-0.25\}$   
 $= 8.75$

**16)  $2 + 5 \times (8 - 6) \div 2$**

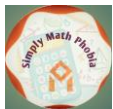
Sol.  $2 + 5 \times (8 - 6) \div 2 = 2 + 5 \times 2 \div 2$   
 $= 2 + 5 \times 1$   
 $= 2 + 5$   
 $= 7$

**17)  $12 - \{9 + (5 - 3) \times [16 \div (2 + 3)]\}$**

Sol.  $12 - \{9 + (5 - 3) \times [16 \div (2 + 3)]\} = 12 - \{9 + (5 - 3) \times [16 \div 5]\}$   
 $= 12 - \{9 + (5 - 3) \times 3.2\}$   
 $= 12 - \{9 + 2 \times 3.2\}$   
 $= 12 - \{9 + 6.4\}$   
 $= 12 - \{15.4\}$   
 $= -3.4$

**18)  $26 \div [2 + 5 \times (8 - 6) + 1]$**

Sol.  $26 \div [2 + 5 \times (8 - 6) + 1] = 26 \div [2 + 5 \times 2 + 1]$   
 $= 26 \div [2 + 10 + 1]$   
 $= 26 \div 13$   
 $= 2$



**19)  $3 \times [6 - 4 \div (8 + 2) + 1]$**

**Sol.**  $3 \times [6 - 4 \div (8 + 2) + 1] = 3 \times [6 - 4 \div 10 + 1]$   
 $= 3 \times [6 - 0.4 + 1]$   
 $= 3 \times [7 - 0.4]$   
 $= 3 \times 6.6$   
 $= 19.8$

**20)  $40 - \{10 + 5 \times [8 - (12 \div 3)] \div 2\}$**

**Sol.**  $40 - \{10 + 5 \times [8 - (12 \div 3)] \div 2\} = 40 - \{10 + 5 \times [8 - 4] \div 2\}$   
 $= 40 - \{10 + 5 \times 4 \div 2\}$   
 $= 40 - \{10 + 5 \times 2\}$   
 $= 40 - \{10 + 10\}$   
 $= 40 - 20$   
 $= 20$

**21)  $15 - 6 \div 2 - 5 \times (-7)$**

**Sol.**  $15 - 6 \div 2 - 5 \times (-7) = 15 - 3 - 5 \times (-7)$   
 $= 15 - 3 + 35$   
 $= 50 - 3$   
 $= 47$

**22)  $23 + 18 \div (8 - 2) + 3 \times (-4)$**

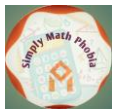
**Sol.**  $23 + 18 \div (8 - 2) + 3 \times (-4) = 23 + 18 \div 6 + 3 \times (-4)$   
 $= 23 + 3 + 3 \times (-4)$   
 $= 23 + 3 - 12$   
 $= 26 - 12$   
 $= 14$

**23)  $17 - \{8 \div (2 \times 3 - 4)\}$**

**Sol.**  $17 - \{8 \div (2 \times 3 - 4)\} = 17 - \{8 \div (6 - 4)\}$   
 $= 17 - \{8 \div 2\}$   
 $= 17 - 4$   
 $= 13$

**24)  $6 - \{5 \times 3 - (-12) \times 16 \div (-8)\}$**

**Sol.**  $6 - \{5 \times 3 - (-12) \times 16 \div (-8)\} = 6 - \{5 \times 3 - (-12) \times (-2)\}$   
 $= 6 - \{5 \times 3 - 24\}$   
 $= 6 - \{15 - 24\}$   
 $= 6 - (-9)$   
 $= 6 + 9$   
 $= 15$



**25)**  $2 \times 5 - [8 - \{11 + 30 \div (4 - \overline{7-5})\}]$

**Sol.**  $2 \times 5 - [8 - \{11 + 30 \div (4 - \overline{7-5})\}] = 2 \times 5 - [8 - \{11 + 30 \div (4 - 2)\}]$   
 $= 2 \times 5 - [8 - \{11 + 30 \div 2\}]$   
 $= 2 \times 5 - [8 - \{11 + 15\}]$   
 $= 2 \times 5 - [8 - 26]$   
 $= 2 \times 5 - (-18)$   
 $= 10 + 18$   
 $= 28$

**26)**  $7-8 \div (-2) + 3 \times (-4)$

**Ans.**  $7-8 \div (-2) + 3 \times (-4) = 7 - (-4) + 3 \times (-4)$   
 $= 7 - (-4) + (-12)$   
 $= 7 + 4 - 12$   
 $= 11 - 12$   
 $= -1$

**27)**  $9 - \{7 - 24 \div (8 + 6 \times 2 - 16)\}$

**Sol.**  $9 - \{7 - 24 \div (8 + 6 \times 2 - 16)\} = 9 - \{7 - 24 \div (8 + 12 - 16)\}$   
 $= 9 - \{7 - 24 \div (20 - 16)\}$   
 $= 9 - \{7 - 24 \div 4\}$   
 $= 9 - \{7 - 6\}$   
 $= 9 - 1$   
 $= 8$

**28)**  $-11 - [-6 - \{3 - 5(8 \div 4 - 1)\}]$

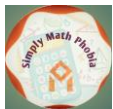
**Sol.**  $-11 - [-6 - \{3 - 5(8 \div 4 - 1)\}] = -11 - [-6 - \{3 - 5(2 - 1)\}]$   
 $= -11 - [-6 - \{3 - 5 \times 1\}]$   
 $= -11 - [-6 - \{3 - 5\}]$   
 $= -11 - [-6 - 2]$   
 $= -11 - (-8)$   
 $= -11 + 8$   
 $= -7$

**29)**  $(-3) \times (-12) \div (-4) + 3 \times 6$

**Sol.**  $(-3) \times (-12) \div (-4) + 3 \times 6 = (-3) \times 3 + 3 \times 6$   
 $= (-9) + 18$   
 $= 9$

**30)**  $14 \div (3 \text{ of } 2 - 3 + 4) - 9(5 - 3)$

**Sol.**  $14 \div (3 \text{ of } 2 - 3 + 4) - 9(5 - 3) = 14 \div (3 \times 2 - 3 + 4) - 9 \times 2$   
 $= 14 \div (3 \times 2 - 3 + 4) - 9 \times 2$   
 $= 14 \div (6 - 3 + 4) - 9 \times 2$   
 $= 14 \div (10 - 3) - 9 \times 2$



$$\begin{aligned} &= 14 \div 7 - 9 \times 2 \\ &= 2 - 9 \times 2 \\ &= 2 - 18 \\ &= -16 \end{aligned}$$

### Fraction simplification questions for class 7

(1)  $\left(\frac{3}{4} + \frac{1}{2}\right) \div 2$

Solution:  $\left(\frac{3}{4} + \frac{1}{2}\right) \div 2 = \left(\frac{3+2}{4}\right) \div 2$

$$= \frac{5}{4} \times \frac{1}{2}$$

$$= \frac{5}{8}$$

(2)  $6 + \left\{\frac{4}{3} + \left(\frac{3}{4} - \frac{1}{3}\right)\right\}$

Solution:  $6 + \left\{\frac{4}{3} + \left(\frac{3}{4} - \frac{1}{3}\right)\right\} = 6 + \left\{\frac{4}{3} + \left(\frac{9-4}{12}\right)\right\}$

$$= 6 + \left\{\frac{4}{3} + \frac{5}{12}\right\}$$

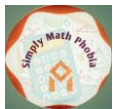
$$= 6 + \left\{\frac{16+5}{12}\right\}$$

$$= 6 + \frac{21}{12}$$

$$= \frac{72+21}{12}$$

$$= \frac{93}{12}$$

$$= 7\frac{3}{4}$$



$$(3) \left( \frac{3}{4} + \frac{1}{2} \right) \div 2$$

$$\text{Solution: } \left( \frac{3}{4} + \frac{1}{2} \right) \div 2 = \left( \frac{6+4}{8} \right) \div 2$$

$$= \frac{10}{8} \times \frac{1}{2}$$

$$= \frac{5}{8}$$

$$(4) \frac{2}{3} \times \left( \frac{4}{5} - \frac{1}{5} \right)$$

$$\text{Solution: } \frac{2}{3} \times \left( \frac{4}{5} - \frac{1}{5} \right) = \frac{2}{3} \times \left( \frac{4-1}{5} \right)$$

$$= \frac{2}{3} \times \frac{3}{5}$$

$$= \frac{2}{5}$$

$$(5) \frac{1}{2} + \frac{3}{4} \div \left( \frac{2}{3} - \frac{1}{6} \right)$$

Solution :

$$= \frac{1}{2} + \frac{3}{4} \div \left( \frac{3}{6} \right)$$

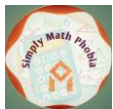
$$= \frac{1}{2} + \frac{3}{4} \times \left( \frac{6}{3} \right)$$

$$= \frac{1}{2} + \frac{3}{2}$$

$$= \frac{4}{2}$$

$$= 2$$





$$(6) 8 - \left\{ \frac{3}{2} + \left( \frac{3}{5} - \frac{1}{2} \right) \right\}$$

Solution :

$$= 8 - \left\{ \frac{3}{2} + \frac{1}{10} \right\}$$

$$= 8 - \left\{ \frac{15 + 1}{10} \right\}$$

$$= 8 - \frac{16}{10}$$

$$= 8 - \frac{8}{5}$$

$$= \frac{40 - 8}{5}$$

$$= \frac{32}{5}$$

$$= 6\frac{2}{5}$$

$$(7) 2\frac{3}{4} - \left[ 3\frac{1}{8} \div \left\{ 5 - \left( 4\frac{2}{3} - \frac{11}{12} \right) \right\} \right]$$

$$\text{Solution : } 2\frac{3}{4} - \left[ 3\frac{1}{8} \div \left\{ 5 - \left( 4\frac{2}{3} - \frac{11}{12} \right) \right\} \right] = \frac{11}{4} - \left[ \frac{25}{8} \div \left\{ 5 - \left( \frac{14}{3} - \frac{11}{12} \right) \right\} \right]$$

$$= \frac{11}{4} - \left[ \frac{25}{8} \div \left\{ 5 - \left( \frac{56 - 11}{12} \right) \right\} \right]$$

$$= \frac{11}{4} - \left[ \frac{25}{8} \div \left\{ 5 - \left( \frac{45}{12} \right) \right\} \right]$$

$$= \frac{11}{4} - \left[ \frac{25}{8} \div \left\{ \frac{60 - 45}{12} \right\} \right]$$

$$= \frac{11}{4} - \left[ \frac{25}{8} \div \frac{5}{4} \right]$$



$$= \frac{11}{4} - \left[ \frac{25}{8} \times \frac{4}{5} \right]$$

$$= \frac{11}{4} - \frac{5}{2}$$

$$= \frac{1}{4}$$

$$(8) \quad 1\frac{1}{5} \div \left\{ 2\frac{1}{3} - (5 + \overline{2-3}) \right\} - 3\frac{1}{2}$$

$$\text{Solution: } 1\frac{1}{5} \div \left\{ 2\frac{1}{3} - (5 + \overline{2-3}) \right\} - 3\frac{1}{2}$$

$$= \frac{6}{5} \div \left\{ \frac{7}{3} - (5 + (-1)) \right\} - \frac{7}{2}$$

$$= \frac{6}{5} \div \left\{ \frac{7}{3} - 4 \right\} - \frac{7}{2}$$

$$= \frac{6}{5} \div \left\{ \frac{7-12}{3} \right\} - \frac{7}{2}$$

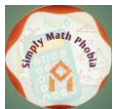
$$= \frac{6}{5} \div \left\{ \frac{-5}{3} \right\} - \frac{7}{2}$$

$$= \frac{6}{5} \times \left\{ -\frac{3}{5} \right\} - \frac{7}{2}$$

$$= -\frac{18}{25} - \frac{7}{2}$$

$$= -\frac{211}{50}$$

$$= -4\frac{11}{50}$$



$$(9) \frac{6}{5} \text{ of } \left( 3\frac{1}{3} - 2\frac{1}{2} \right) \div \left( 2\frac{5}{21} - 2 \right)$$

$$\text{Solution : } \frac{6}{5} \text{ of } \left( 3\frac{1}{3} - 2\frac{1}{2} \right) \div \left( 2\frac{5}{21} - 2 \right)$$

$$= \frac{6}{5} \text{ of } \left( \frac{10}{3} - \frac{5}{2} \right) \div \left( \frac{47}{21} - 2 \right)$$

$$= \frac{6}{5} \text{ of } \left( \frac{20 - 15}{6} \right) \div \left( \frac{47 - 42}{21} \right)$$

$$= \frac{6}{5} \text{ of } \left( \frac{5}{6} \right) \div \left( \frac{5}{21} \right)$$

$$= \frac{6}{5} \times \left( \frac{5}{6} \right) \times \left( \frac{21}{5} \right)$$

$$= \frac{21}{5}$$

$$= 4\frac{1}{5}$$

$$(10) \frac{2}{3} + \frac{1}{6} \times \frac{5}{4}$$

$$\text{Solution : } \frac{2}{3} + \frac{1}{6} \times \frac{5}{4} = \frac{2}{3} + \frac{5}{24}$$

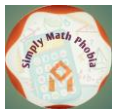
$$= \frac{16 + 5}{24}$$

$$= \frac{21}{24}$$

$$= \frac{7}{8}$$

$$(11) \left( \frac{3}{4} + \frac{1}{6} \right) \div \frac{1}{3}$$

$$\text{Solution : } \left( \frac{3}{4} + \frac{1}{6} \right) \div \frac{1}{3}$$



$$= \left( \frac{18+4}{24} \right) \div \frac{1}{3}$$

$$= \frac{22}{24} \div \frac{1}{3}$$

$$= \frac{22}{24} \times \frac{3}{1}$$

$$= \frac{22}{8}$$

$$= \frac{11}{4}$$

$$(12) \frac{1}{2} \times \left( \frac{3}{4} - \frac{1}{8} \right)$$

$$\text{Solution : } \frac{1}{2} \times \left( \frac{3}{4} - \frac{1}{8} \right)$$

$$= \frac{1}{2} \times \left( \frac{6-1}{8} \right)$$

$$= \frac{1}{2} \times \frac{5}{8}$$

$$= \frac{5}{16}$$

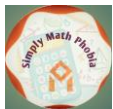
$$(13) \frac{2}{3} - \frac{1}{4} \div \frac{1}{6}$$

$$\text{Solution : } \frac{2}{3} - \frac{1}{4} \div \frac{1}{6} = \frac{2}{3} - \frac{1}{4} \times \frac{6}{1}$$

$$= \frac{2}{3} - \frac{6}{4}$$

$$= \frac{8 - 18}{12}$$

$$= -\frac{10}{12}$$



$$= -\frac{5}{6}$$

14)  $\left(\frac{1}{2} \div \frac{4}{5} \times \frac{4}{7}\right)$

Solution:  $\left(\frac{1}{2} \div \frac{4}{5} \times \frac{4}{7}\right) = \left(\frac{1}{2} \times \frac{5}{4} \times \frac{4}{7}\right)$

$$= \left(\frac{1}{2} \times \frac{5}{7}\right)$$

$$= \frac{5}{14}$$

15)  $3\frac{3}{7} \div 5\frac{1}{7} + 2\frac{1}{4}$

Solution :  $3\frac{3}{7} \div 5\frac{1}{7} + 2\frac{1}{4} = \frac{24}{7} \div \frac{36}{7} + \frac{9}{4}$

$$= \frac{24}{7} \times \frac{7}{36} + \frac{9}{4}$$

$$= \frac{24}{36} + \frac{9}{4}$$

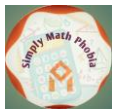
$$= \frac{2}{3} + \frac{9}{4}$$

$$= \frac{8 + 27}{12}$$

$$= \frac{35}{12}$$

$$= 2\frac{11}{12}$$

16)  $\frac{2}{3}$  of  $\left(5\frac{1}{6} - 4\frac{3}{8}\right)$



Solution:  $\frac{2}{3}$  of  $\left(5\frac{1}{6} - 4\frac{3}{8}\right) = \frac{2}{3} \times \left(\frac{31}{6} - \frac{35}{8}\right)$

$$= \frac{2}{3} \times \left(\frac{248 - 210}{48}\right)$$

$$= \frac{2}{3} \times \frac{38}{48}$$

$$= \frac{2}{3} \times \frac{19}{24}$$

$$= \frac{19}{36}$$

17)  $\frac{3}{5}$  of  $1\frac{1}{9} + 3\frac{1}{2}$

Solution:  $\frac{3}{5}$  of  $1\frac{1}{9} + 3\frac{1}{2} = \frac{3}{5} \times \frac{10}{9} + \frac{7}{2}$

$$= \frac{30}{45} + \frac{7}{2}$$

$$= \frac{2}{3} + \frac{7}{2}$$

$$= \frac{4 + 21}{6}$$

$$= \frac{25}{6}$$

$$= 4\frac{1}{6}$$

18)  $\frac{4}{5} \times 2\frac{3}{8} - 2 \times \frac{3}{5}$

Solution :  $\frac{4}{5} \times 2\frac{3}{8} - 2 \times \frac{3}{5} = \frac{4}{5} \times \frac{19}{8} - 2 \times \frac{3}{5}$



$$\frac{76}{40} - \frac{6}{5}$$

$$= \frac{76 - 48}{40}$$

$$= \frac{28}{40}$$

$$= \frac{7}{10}$$

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

Solution:  $\left(\frac{1}{4} \text{ of } 2\frac{2}{7}\right) \div \frac{3}{5} = \left(\frac{1}{4} \text{ of } \frac{16}{7}\right) \div \frac{3}{5}$

$$= \left(\frac{1}{4} \times \frac{16}{7}\right) \div \frac{3}{5}$$

$$= \frac{16}{28} \times \frac{5}{3}$$

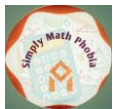
$$= \frac{20}{21}$$

20)  $\left(\frac{3}{7} \div \frac{1}{2}\right) \div \frac{7}{8}$

Solution:  $\left(\frac{3}{7} \div \frac{1}{2}\right) \div \frac{7}{8} = \left(\frac{3}{7} \times \frac{2}{1}\right) \times \frac{8}{7}$

$$= \frac{6}{7} \times \frac{8}{7}$$

$$= \frac{48}{49}$$



21)  $\frac{5}{8} \div \frac{3}{4} + \frac{2}{5}$

Solution:  $\frac{5}{8} \div \frac{3}{4} + \frac{2}{5} = \frac{5}{8} \times \frac{4}{3} + \frac{2}{5}$

$$= \frac{5}{6} + \frac{2}{5}$$

$$= \frac{25 + 12}{30}$$

$$= \frac{37}{30}$$

$$= 1\frac{7}{30}$$

22)  $\left(4\frac{1}{2} - 2\frac{2}{3}\right) \div \frac{7}{12} + 5\frac{1}{2}$  of  $3\frac{5}{6}$

Solution:  $\left(4\frac{1}{2} - 2\frac{2}{3}\right) \div \frac{7}{12} + 5\frac{1}{2}$  of  $3\frac{5}{6} = \left(\frac{9}{2} - \frac{8}{3}\right) \div \frac{7}{12} + \frac{11}{2} \times \frac{23}{6}$

$$= \left(\frac{27 - 16}{6}\right) \div \frac{7}{12} + \frac{11}{2} \times \frac{23}{6}$$

$$= \frac{11}{6} \times \frac{12}{7} + \frac{11}{2} \times \frac{23}{6}$$

$$= \frac{132}{42} + \frac{253}{12}$$

$$= \frac{22}{7} + \frac{253}{12}$$

$$= \frac{264 + 1771}{84}$$





$$\begin{array}{r} 2035 \\ = 84 \end{array}$$

$$= 24 \frac{19}{84}$$

$$\mathbf{23)} \left(\frac{1}{2} + \frac{1}{3}\right) \div \left(\frac{1}{4} - \frac{1}{6}\right) - [8 - \{5\frac{1}{3} - (3 - 2\frac{1}{2})\}]$$

$$\text{Solution: } = \left(\frac{1}{2} + \frac{1}{3}\right) \div \left(\frac{1}{4} - \frac{1}{6}\right) - [8 - \{5\frac{1}{3} - (3 - 2\frac{1}{2})\}]$$

$$= \left(\frac{3+2}{6}\right) \div \left(\frac{6-4}{24}\right) - [8 - \{5\frac{1}{3} - (3 - 2\frac{1}{2})\}]$$

$$= \frac{5}{6} \div \frac{2}{24} - \left[8 - \left\{\frac{16}{3} - \frac{1}{2}\right\}\right]$$

$$= \frac{5}{6} \times \frac{24}{2} - \left[8 - \left\{\frac{32-3}{6}\right\}\right]$$

$$= \frac{5}{6} \times \frac{24}{2} - \left[8 - \frac{29}{6}\right]$$

$$= \frac{5}{6} \times \frac{24}{2} - \left[\frac{48-29}{6}\right]$$

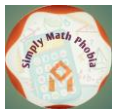
$$= \frac{120}{12} - \frac{19}{6}$$

$$= \frac{120-38}{12}$$

$$= \frac{82}{12}$$

$$= 6\frac{5}{6}$$

$$\mathbf{24)} \frac{2}{3} - \frac{1}{4} \div \frac{1}{6}$$



$$\text{Solution: } \frac{2}{3} - \frac{1}{4} \div \frac{1}{6} - \frac{2}{3} - \frac{1}{4} \times \frac{6}{1}$$

$$= \frac{2}{3} - \frac{3}{2}$$

$$= \frac{4 - 9}{6}$$

$$= \frac{-5}{6}$$

### Simplification questions for class 7 (Unsolved with answers)

Simplify each of the following:

(i)  $36 - 2(20 + 12 \div 4 \times 3 - 2 \times 2) + 10$

(ii)  $18 + (28 - 7) \div 3 - 11$

(iii)  $5\frac{1}{7} - \{3\frac{3}{10} \div (2\frac{4}{5} - \frac{7}{10})\}$

(iv)  $22 - \frac{1}{4}\{-5 - (-48) \div (-16)\}$

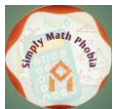
(v)  $7\frac{1}{3} \div \frac{2}{3}$  of  $2\frac{1}{5} + 1\frac{3}{8} \div 2\frac{3}{4} - 1\frac{1}{2}$

(vi)  $(\frac{2}{3} + \frac{4}{9})$  of  $\frac{3}{5} \div 1\frac{2}{3} \times 1\frac{1}{4} - \frac{1}{3}$

(vii)  $8 - [28 \div \{34 - (36 - 18 \div 9 \times 8)\}]$

(viii)  $6 - [\frac{5}{6} + \{3\frac{7}{8} - 2\frac{1}{3} + 1\frac{7}{9}\}]$

(ix)  $9\frac{3}{4} \div [2\frac{1}{6} + \{4\frac{1}{3} - (1\frac{1}{2} + 1\frac{3}{4})\}]$        $\div$



(x)  $54 \div 3$  of  $6+9$

(xi)  $19 - [4 + \{16 - (12 - 2)\}]$

(xii)  $36 - [18 - \{14 - (15 - 4 \div 2 \times 2)\}]$

(xiii)  $39 - [23 - \{29 - (17 - \overline{9 - 3})\}]$

(xiv)  $15 - (-5) \{4 - \overline{7 - 3}\} \div [3\{5 + (-3) \times (-6)\}]$

(xv)  $27 - [38 - (46 - (15 - \overline{13 - 2}))]$

(xvi)  $4 + \frac{1}{5} [(-10 \times (25 - \overline{13 - 3})) \div (-5)]$

(xvii)  $25 - \frac{1}{2} [5 + 4 - (3 + 2 - \overline{1 + 3})]$

(xviii)  $1 - \frac{3}{7}$  of  $(6 + 8 \times 1) + [\frac{1}{5} - \frac{7}{25} - 1]$

(xix)  $5 \times [25 + \{(-4) \times (16 - 8 \div 2)\}]$

(xx)  $\frac{2}{3} \times 1\frac{1}{4} \div \frac{3}{7}$  of  $2\frac{5}{8}$

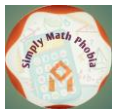
(xxi)  $\frac{4}{5} \div \frac{7}{15}$  of  $\frac{8}{9}$

(xxii)  $\frac{6}{5}$  of  $(3\frac{1}{3} - 2\frac{1}{2}) + (2\frac{5}{21} - 2)$

(xxiii)  $(\frac{1}{2} - \frac{1}{3})(\frac{3}{4} - \frac{4}{5}) \div (\frac{1}{2} - \frac{2}{5} + \frac{1}{7})$

(xxiv)  $4\frac{4}{5} \div \frac{3}{5}$  of  $5 + \frac{4}{5} \times \frac{3}{10} - \frac{1}{5}$

(xxv)  $4(10 + 15 \div 5 \times 4 - 2 \times 2)$



Ans. (i) -4 (ii) 14 (iii)  $3\frac{4}{7}$  (iv) 24 (v) 4 (vi)  $\frac{1}{6}$  (vii) 6 (viii)  $1\frac{61}{72}$  (ix) 3

(x) 12 (xi) 9 (xii) 21 (xiii) 34 (xiv) 15 (xv) 31 (xvi) 10 (xvii) 21 (xviii)  $-\frac{5}{42}$

(xix) -115 (xx)  $\frac{20}{27}$  (xxi)  $1\frac{13}{14}$  (xxii)  $4\frac{1}{5}$  (xxiii)  $-\frac{7}{204}$  (xxiv)  $1\frac{16}{25}$  (xxv) 72

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