

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 12

CHAPTER NAME : SIMPLIFICATION : BODMAS

SUB-TOPIC : ORDER OF OPERATION: DMAS

EXERCISE 12 A

CHANGING YOUR TOMORROW

SIMPLIFICATION

The act of organizing objects according to the operations.

THE ORDER OF OPERATIONS IN MATHS:

D M A S

DIVISION

MULTIPLICATION

ADDITION

SUBTRACTION

DMAS helps us to solve calculations involving more than one operations.

D M A S

$$\begin{array}{r} \text{Ex:1 } 8 + 6 \div 2 \\ \downarrow \\ = 8 + 3 = 11 \end{array}$$

$$\text{Ex. 2. } 14 + 24 \div 8 \times 20 - 60$$

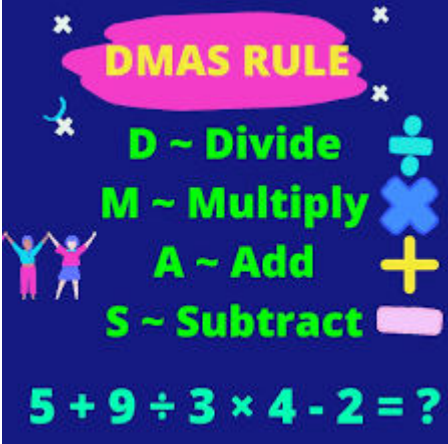
$$14 + 24 \div 8 \times 20 - 60 \text{ (divide)}$$

$$= 14 + 3 \times 20 - 60 \text{ (multiply)}$$

$$= 14 + 60 - 60 \text{ (add)}$$

$$= 74 - 60 \text{ (subtract)}$$

$$= 14 \text{ Ans}$$



DMAS RULE

- D ~ Divide
- M ~ Multiply
- A ~ Add
- S ~ Subtract

5 + 9 ÷ 3 × 4 - 2 = ?

The infographic features a dark blue background with a pink oval containing the text 'DMAS RULE'. To the right of the text are icons for each operation: a blue division symbol for 'D', a blue multiplication symbol for 'M', a yellow plus sign for 'A', and a blue minus sign for 'S'. On the left side, there are small icons of two people holding hands and a star. At the bottom, a math problem '5 + 9 ÷ 3 × 4 - 2 = ?' is displayed in yellow text.

EXERCISE- 12 A

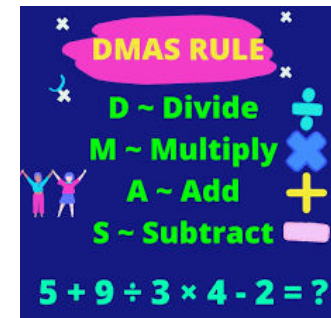
SIMPLIFY

$$\begin{aligned} 1. \quad & 48 \div 6 + 7 \\ & = 8 + 7 \\ & = 15 \end{aligned}$$

$$\begin{aligned} 3. \quad & 18 \div 2 \times 14 + 15 \\ & = 9 \times 14 + 15 \\ & = 126 + 15 \\ & = 141 \end{aligned}$$

$$\begin{aligned} 2. \quad & 72 \div 12 - 6 + 4 \\ & = 6 - 6 + 4 \\ & = 4 \end{aligned}$$

$$\begin{aligned} 4. \quad & 26 + 6 \times 56 \div 8 \\ & = 26 + 6 \times 7 \\ & = 26 + 42 \\ & = 68 \end{aligned}$$



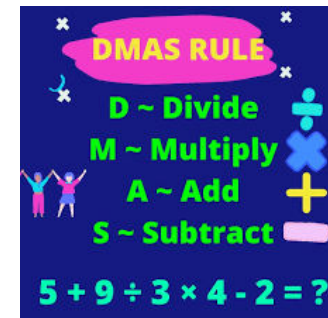
EXERCISE- 12 A

SIMPLIFY

$$\begin{aligned} 5. \quad & 112 \div 7 \times 5 - 35 \\ & = 16 \times 5 - 35 \\ & = 80 - 35 \\ & = 45 \end{aligned}$$

$$\begin{aligned} 7. \quad & 64 + 7 + 26 \div 13 - 39 \\ & = 64 + 7 + 2 - 39 \\ & = 73 - 39 \\ & = 34 \end{aligned}$$

$$\begin{aligned} 6. \quad & 28 \times 6 \div 3 - 36 \\ & = 28 \times 2 - 36 \\ & = 56 - 36 \\ & = 20 \end{aligned}$$



The logo for 'Learning Outcomes' features the words 'Learning' and 'Outcomes' in a large, bold, black font with a yellow outline. To the left of the text is a blue graduation cap with a tassel. Above the word 'Learning' is a red apple with a green leaf. The entire logo is set against a white background with a subtle drop shadow.

Learning Outcomes

Students are able to:

Calculate through organizing operations.

THANKING YOU
ODM EDUCATIONAL GROUP

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 12

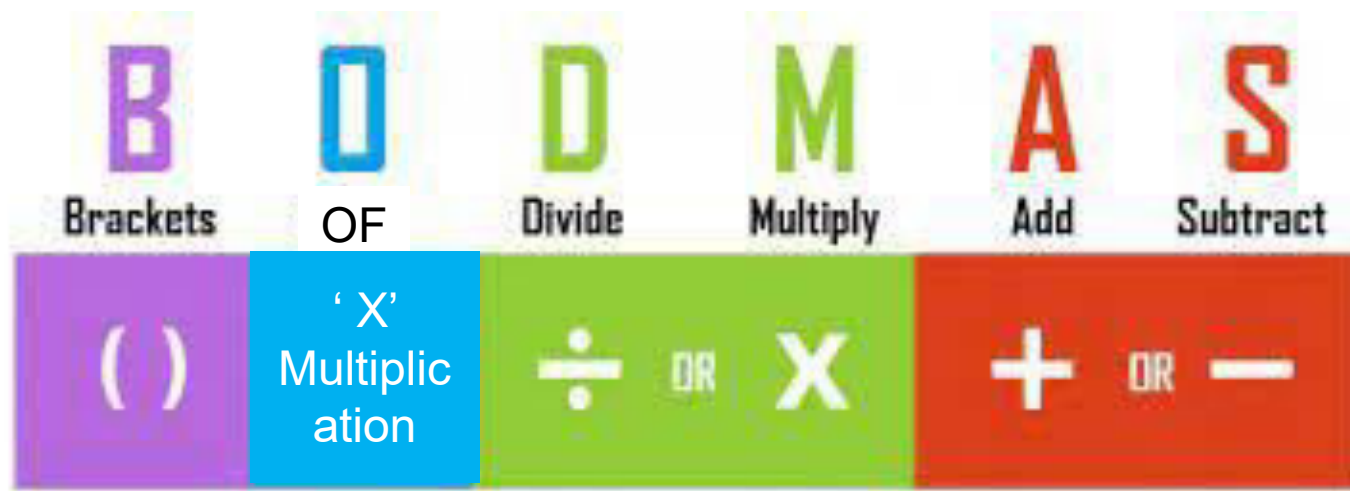
CHAPTER NAME : SIMPLIFICATION : BODMAS

SUB-TOPIC : ORDER OF OPERATION: BODMAS

EXERCISE 12 B

CHANGING YOUR TOMORROW

ORDER OF OPERATION



If the word '**OF**' is used in any expression it means we have to do the **multiplication**.

TYPES OF BRACKET

1. Bar bracket ———
2. Common bracket / Parentheses ()
3. Curly bracket { }
4. Square bracket []

Expression given within the bracket must be simplified first.



Rules to be followed

- 1st Remove the brackets by simplifying all the operations inside it.
- 2nd Perform operations involving 'OF'
- 3rd Follow D M A S rule.

Example: $25 - (19 + 8) \div \frac{1}{3}$ of 18

$$= 25 - 27 \div \frac{1}{3} \text{ of } 18 \quad (\text{bracket})$$

$$= 25 - 27 \div 6 \quad (\text{Of})$$

$$= 25 - \frac{9}{2} = \frac{50 - 9}{2} \quad (\text{Divide})$$

$$= \frac{41}{2} \quad (\text{subtract})$$

Rough

$$\frac{1}{3} \times 18 = 6$$

$$\frac{27}{6} = \frac{9}{2}$$

B O D M A S



EXAMPLE: $92 \div [18 + 4\{ 6 + (12 - 10 + 1) \}]$

(Bar bracket $10 + 1 = 11$)

$$= 92 \div [18 + 4 \{ 6 + (12 - 11) \}]$$

(Common bracket $12 - 11 = 1$)

$$= 92 \div [18 + 4 \{ 6 + 1 \}]$$

(Curly bracket $6 + 1 = 7$)

$$= 92 \div [18 + 4 \times 7]$$

Square bracket $18 + 4 \times 7 = 18 + 28 = 46$

$$= 92 \div 46$$

$$= 2$$



SIMPLIFICATION : BODMAS

EXERCISE 12 B

$$1.8 \frac{3}{5} - \left(6 \frac{1}{2} - 4 \frac{1}{4} - 3 \frac{3}{4} \right)$$

$$= \frac{43}{5} - \left(\frac{13}{2} - \frac{17}{4} - \frac{15}{4} \right)$$

$$= \frac{43}{5} - \left(\frac{13}{2} - \frac{2}{4} \right)$$

$$= \frac{43}{5} - \left(\frac{26 - 2}{4} \right)$$

$$= \frac{43}{5} - \frac{\cancel{24}^6}{\cancel{4}} = \frac{43}{5} - 6$$

$$= \frac{43 - 30}{5} = \frac{13}{5} = 2\frac{3}{5}$$



SIMPLIFICATION : BODMAS

EXERCISE 12 B

$$\begin{aligned} 2. \quad & 17 \frac{1}{3} \div \left\{ 6 \frac{2}{11} - \left(4 - 2 \frac{3}{11} - 1 \right) \right\} \\ &= \frac{52}{3} \div \left\{ \frac{68}{11} - \left(4 - \frac{25}{11} - 1 \right) \right\} \\ &= \frac{52}{3} \div \left\{ \frac{68}{11} - \left(4 - \frac{14}{11} \right) \right\} \\ &= \frac{52}{3} \div \left\{ \frac{68}{11} - \left(\frac{44 - 14}{11} \right) \right\} = \frac{52}{3} \div \left\{ \frac{68}{11} - \frac{30}{11} \right\} \\ &= \frac{50}{3} \div \frac{38}{11} = \frac{26}{3} \times \frac{11}{19} \\ &= \frac{26 \times 11}{3 \times 19} = \frac{286}{57} = 5 \frac{1}{57} \end{aligned}$$

SIMPLIFICATION : BODMAS

EXERCISE 12 B

$$\begin{aligned} 3. \quad & 3.2 \div \{ 1.8 + (3 \div 1.5 + 0.6 - 0.4) \} \\ & = 3.2 \div \{ 1.8 + (3 \div 1.5 + 0.2) \} \\ & = 3.2 \div \{ 1.8 + (3 \div \overset{2}{\cancel{1.5}}) \} \\ & = 3.2 \div \{ 1.8 + (2 + 0.2) \} \\ & = 3.2 \div \{ 1.8 + 2.2 \} \\ & = 3.2 \div 4 = \mathbf{0.8} \end{aligned}$$



EXERCISE 12 B

$$\begin{aligned} 4. \quad & 8\frac{1}{4} + \left[4\frac{1}{2} + \left\{ 8\frac{1}{3} - \left(3\frac{1}{2} - 6\frac{3}{4} - 5\frac{1}{2} \right) \right\} \right] \\ &= \frac{33}{4} + \left[\frac{9}{2} + \left\{ \frac{25}{3} - \left(\frac{7}{2} - \frac{27}{4} - \frac{11}{2} \right) \right\} \right] \\ &= \frac{33}{4} + \left[\frac{9}{2} + \left\{ \frac{25}{3} - \left(\frac{7}{2} - \frac{27-22}{4} \right) \right\} \right] \\ &= \frac{33}{4} + \left[\frac{9}{2} + \left\{ \frac{25}{3} - \left(\frac{7}{2} - \frac{5}{4} \right) \right\} \right] \\ &= \frac{33}{4} + \left[\frac{9}{2} + \left\{ \frac{25}{3} - \left(\frac{14-5}{4} \right) \right\} \right] \\ &= \frac{33}{4} + \left[\frac{9}{2} + \left\{ \frac{25}{3} - \frac{9}{4} \right\} \right] \end{aligned}$$



EXERCISE 12 B

$$= \frac{33}{4} + \left[\frac{9}{2} + \left\{ \frac{100 - 27}{12} \right\} \right]$$

$$= \frac{33}{4} + \left[\frac{9}{2} + \frac{73}{12} \right]$$

$$= \frac{33}{4} + \left[\frac{54 + 73}{12} \right]$$

$$= \frac{33}{4} + \frac{127}{12}$$

$$= \frac{99 + 127}{12} = \frac{226}{12} = 18 \frac{5}{6}$$

Note: In the original image, the fraction $\frac{226}{12}$ is crossed out with a red line. The number 11 is written above the 226, and the number 6 is written below the 12. The final result is $18 \frac{5}{6}$.



$$5. \quad 5 \frac{3}{8} - \left[3 \frac{3}{5} - \left\{ 1 \frac{3}{8} - \left(\frac{3}{4} - \frac{1}{2} - \frac{1}{4} \right) \right\} \right]$$

$$= 5 \frac{3}{8} - \left[3 \frac{3}{5} - \left\{ 1 \frac{3}{8} - \left(\frac{3}{4} - \frac{1}{4} \right) \right\} \right]$$

$$= 5 \frac{3}{8} - \left[3 \frac{3}{5} - \left\{ 1 \frac{3}{8} - \frac{2}{4} \right\} \right]$$

$$= 5 \frac{3}{8} - \left[3 \frac{3}{5} - \frac{7}{8} \right]$$

$$= 5 \frac{3}{8} - \left[\frac{18}{5} - \frac{7}{8} \right]$$

$$= 5 \frac{3}{8} - \left[\frac{18 \times 8 - 7 \times 5}{40} \right] = 5 \frac{3}{8} + \left[\frac{144 - 35}{40} \right]$$

$$= 5 \frac{3}{8} - \frac{109}{40} = \frac{43}{8} + \frac{109}{40} = \frac{43 \times 5 - 109}{40}$$

$$= \frac{215 - 109}{40} = \frac{106 \div 2}{40 \div 2} = \frac{53}{20} = 2 \frac{13}{20}$$



EXERCISE 12 B

$$\begin{aligned} 7. & \quad 7.2 + [0.2 \text{ of } 10 - \{ 0.6 \div 0.3 - 0.8 - 0.6 \}] \\ & = 7.2 + [0.2 \text{ of } 10 - \{ 0.6 \div 0.3 - 0.2 \}] \\ & = 7.2 + [0.2 \text{ of } 10 - \{ 0.6 - \underline{0.2} \}] \\ & \quad \quad \quad 0.3 \\ & = 7.2 + [0.2 \text{ of } 10 - \{ 2 - 0.2 \}] \\ & = 7.2 + [0.2 \text{ of } 10 - 1.8] \\ & = 7.2 + [0.2 \times 10 - 1.8] \\ & = 7.2 + [2 - 1.8] \\ & = 7.2 + 0.2 \\ & = \quad \quad \quad \mathbf{7.4} \end{aligned}$$





- Complete exercise 12 B Q. 10 in the note book.**

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