

MATHEMATICAL OPERATION

Problem Solving by Substitution

In this type, you are provided with substitutes for various mathematical symbols, followed by a question involving calculation of an expression or choosing the correct/ incorrect equation. The candidate is required to put in the real signs in the given equation and then solve the question as required.

Note: While solving a mathematical expression, proceed according to the rule BODMAS – i.e. Brackets, of Division Multiplication, Addition, Subtraction.

$$\begin{aligned} \text{e.g., } & (36 - 12) \div 4 + 6 \div 2 \times 3 \\ & = 24 \div 4 + 6 \div 2 \times 3 && \text{(Solving Bracket)} \\ & = 6 + 3 \times 3 && \text{(Solving Division)} \\ & = 6 + 9 && \text{(Solving Multiplication)} \\ & = 15 \end{aligned}$$

Examples:

Ex.1 If '+' means 'divided by', '-' means 'multiplied by', 'x' means 'minus' and '÷' means 'plus', which of the following will be value of the expression $16 \div 8 - 4 + 2 \times 4$?

- (A) 16 (B) 28
 (C) 32 (D) 44

Sol. (B) Putting the proper signs in the given expression, we get:

$$\begin{aligned} & 16 + 8 \times 4 \div 2 - 4 \\ & = 16 + 16 - 4 \\ & = 32 - 4 \\ & = 28 \end{aligned}$$

Ex.2 If + means ÷, - means x, ÷ means + and x means -, then $36 \times 12 + 4 \div 6 + 2 - 3 = ?$

- (A) 2 (B) 18
 (C) 42 (D) $6\frac{1}{2}$

Sol. (C) Using the proper signs, we get:

$$\begin{aligned} & 36 \times 12 + 4 \div 6 + 2 - 3 + 3 \times 3 \\ & = 36 - 3 + 9 \\ & = 45 - 3 \\ & = 42 \end{aligned}$$

Ex.3 If A means 'plus', B means 'minus', C means 'divided by' and D means 'multiplied by', then $18 A 12 C 6 D 2 B 5 = ?$

- (A) 15 (B) 25
 (C) 27 (D) none

Sol. (D) Using the proper signs, we get:
 Given expression = $18 + 12 \div 6 \times 2 - 5$
 $= 18 + 2 \times 2 - 5$
 $= 18 + 4 - 5$
 $= 22 - 5 = 17$

So, the answer is (D)

Ex.4 If x stands for -, ÷ stands for +, + stands for ÷ and - stands for x, which one of the following equations is correct?

- (A) $15 - 5 \div 5 \times 20 + 10 = 6$
 (B) $8 \div 10 - 3 + 5 \times 6 = 8$
 (C) $6 \times 2 + 3 \div 12 - 3 = 15$
 (D) $3 \div 7 - 5 \times 10 + 3 = 10$

Sol. (B) Using the proper signs, we get:

$$\begin{aligned} \text{Expression in (a)} & = 15 \times 5 + 5 - 20 \div 10 \\ & = 15 \times 5 + 5 - 2 \\ & = 75 + 5 - 2 \\ & = 78 \end{aligned}$$

$$\begin{aligned} \text{Expression in (b)} & = 8 + 10 \times 3 \div 5 - 6 \\ & = 8 + 10 \times \frac{3}{5} - 6 \\ & = 8 + 6 - 6 \\ & = 8 \end{aligned}$$

$$\begin{aligned} \text{Expression in (c)} & = 6 - 2 \div 3 + 12 \times 3 \\ & = 6 - \frac{2}{3} + 36 \\ & = 42 - \frac{2}{3} \\ & = \frac{124}{3} \end{aligned}$$

$$\begin{aligned} \text{Expression in (d)} & = 3 + 7 \times 5 - 10 \div 3 \\ & = 3 + 7 \times 5 - \frac{10}{3} \\ & = 3 + 35 - \frac{10}{3} \\ & = \frac{104}{3} \end{aligned}$$

Ex.5 It being given that \succ denotes $+$, \prec denotes $-$, \succ denotes \div , \prec denotes $=$, \succ denotes 'less than' and \times denotes 'greater than', find which of the following is a correct statement

- (A) $3 + 2 > 4 = 9 + 3 < 2$
 (B) $3 > 2 > 4 = 18 + 3 < 1$
 (C) $3 > 2 < 4 \times 8 + 4 < 2$
 (D) $3 + 2 < 4 \times 9 + 3 < 3$

Sol. (C) Using proper notations, we have:

- (A) Given statement is $3 \div 2 + 4 < 9 \div 3 - 2$ or $\frac{11}{2} < 1$,. Which is not true.
 (B) Given statement is $3 + 2 + 4 < 18 \div 3 - 1$ or $9 < 5$ which is not true.
 (C) Given statement is $3 + 2 - 4 > 8 \div 4 - 2$ or $1 > 0$, which is true.
 (D) Given statement is $3 \div 2 - 4 > 9 \div 3 - 3$ or $-\frac{5}{2} > 0$, which is not true.

So, the statement (c) is true

Interchange of Signs and Numbers

Ex.6 If the given interchanged namely: signs $+$ and \div and numbers 2 and 4 are made in signs and

numbers, which one of the following four equations would be correct?

- (A) $2 + 4 \div 3 = 3$ (B) $4 + 2 \div 6 = 1.5$
 (C) $4 \div 2 + 3 = 4$ (D) $2 + 4 \div 6 = 8$

Sol. Interchanging $+$ and \div and 2 and 4, we get :

- (A) $4 \div 2 + 3 = 3$ or $5 = 3$, which is false
 (B) $2 \div 4 + 6 = 1.5$ or $6.5 = 1.5$ which is false
 (C) $2 + 4 \div 3 = 4$ or $\frac{10}{3} = 4$ which is false
 (D) $4 \div 2 + 6 = 8$ or $8 = 8$, which is true

Ex.7 Which one of the of the four interchanges in signs and numbers would make the given equation correct?

- $3 + 5 - 2 = 4$
 (A) $+$ and $-$, 2 and 3 (B) $+$ and $-$, 2 and 5
 (C) $+$ and $-$, 3 and 5 (D) none of these

Sol. (C) By making the interchanges given in (b), we get the equation as

- $2 - 5 + 3 = 4$ or $0 = 4$, which is false
 $3 - 2 + 5 = 4$ or $6 = 4$, which is false

By making the interchanges given in (c), we get the equation as

- $5 - 3 + 2 = 4$ or $4 = 4$, which is true

Exercise

Q.1 If P denotes \div , Q denotes \times , R denotes $+$ and S denotes $-$, then

$18 Q 12 P 4 R 5 S 6 = ?$

- (A) 36 (B) 53
 (C) 59 (D) 65

Q.2 If a means 'plus', b means 'minus', c means 'multiplied by' and d means 'divided by' then

$18 c 14 a 6 b 16 d 4 =$

- (A) 63 (B) 254
 (C) 288 (D) 1208

Q.3 If A means $-$, B means \div , C means $+$ and D means \times , then

$15 B 3 C 24 A 12 D 2 = ?$

- (A) 5 (B) 2
 (C) 15 (D) none

Q.4 If x stands for 'add', y stands for 'subtract', z stands for 'divide and p stands for 'multiply', then what is the value of $(7 p 3) y 6 \times 5$?

- (A) 5 (B) 10
 (C) 15 (D) 20

Q.5 If A stands for $+$, B stands for $-$, C stands for \times , then what is the value of $(10 C 4) A (4 C 4) B 6$?

- (A) 60 (B) 56
 (C) 50 (D) 46

Q.6 If L denotes \times , M denotes \div , P denotes $+$ and Q denotes $-$, then

$16 P 24 M 8 Q 6 M 2 L 3 = ?$

- (A) $\frac{13}{6}$ (B) $-\frac{1}{6}$

- (C) $14\frac{1}{2}$ (D) 10

Q.7 If $-$ means \div , $+$ means \times , \div means $-$, \times means $+$, then which of the following equations is correct?

- (A) $52 \div 4 + 5 \times 8 - 2 = 36$
 (B) $43 \times 7 \div 5 + 4 - 8 = 25$
 (C) $36 \times 4 - 12 + 5 \div 3 = 420$
 (D) $36 - 12 \times 6 \div 3 + 4 = 60$

Directions (Q.22-23)

In each of the following questions if the given interchanges are made in signs and numbers, which one of the four equations would be correct?

Q.22 Given interchanges: Signs $-$ and \times and numbers 3 and 6

- (A) $6 - 3 \times 2 = 9$ (B) $3 - 6 \times 8 = 10$
 (C) $6 \times 3 - 4 = 15$ (D) $3 \times 6 - 4 = 33$

Q.23 Find out the two signs to be interchanged for making following equations correct:

$$5 + 3 \times 8 - 12 \div 4 = 3$$

- (A) $+$ and $-$ (B) $-$ and \div
 (C) $+$ and \times (D) $+$ and \div

Directions (Q.24-27)

In each of the following questions, an equation becomes incorrect due to the interchange of two signs. One of the four alternatives under it specifies the interchange of signs in the equation, which when made will make the equation correct. Find the correct alternative.

Q.24 $16 - 8 \div 4 + 5 \times 2 = 8$

- (A) \div and \times (B) $-$ and \div
 (C) \div and $+$ (D) $-$ and \times

Q.25 $9 + 5 \div 4 \times 3 - 6 = 12$

- (A) $+$ and \times (B) \div and \times
 (C) \div and $-$ (D) $+$ and $-$

Q.26 $12 \div 2 - 6 \times 3 + 8 = 16$

- (A) \div and $+$ (B) $-$ and $+$
 (C) \times and $+$ (D) \div and \times

Q.27 Which of the following two signs need to be interchanged to make the given equation correct?

$$10 + 10 \div 10 - 10 \times 10 = 10$$

- (A) $+$ and $-$ (B) $+$ and \div
 (C) $+$ and \times (D) $+$ and \times

Directions (Q.28-32)

In each of the following questions, the two expressions on either side of the sign ($=$) will have the same value if two terms on either side or on the same side are interchanged. The correct terms to be interchanged have

Q.28 $5 + 3 \times 6 - 4 \div 2 = 4 \times 3 - 10 \div 2 + 7$

- (A) 4, 7 (B) 5, 7
 (C) 6, 4 (D) 6, 10

Q.29 $7 \times 2 - 3 + 8 \div 4 = 5 + 6 \times 2 - 24 \div 3$

- (A) 2, 6 (B) 6, 5
 (C) 3, 24 (D) 7, 6

Q.30 $15 + 3 \times 4 - 8 \div 2 = 8 \times 5 + 16 \div 2 - 1$

- (A) 3, 5 (B) 15, 5
 (C) 15, 16 (D) 3, 1

Q.31 $6 \times 3 + 8 \div 2 - 1 = 9 - 8 \div 4 + 5 \times 2$

- (A) 3, 4 (B) 3, 5
 (C) 6, 9 (D) 9, 5

Q.32 $8 \div 2 \times 5 - 11 + 9 = 6 \times 2 - 5 + 4 \div 2$

- (A) 5, 9 (B) 8, 5
 (C) 9, 6 (D) 11, 5

Directions (Q.33-36)

In each of the following question, which one of the four interchanges in signs and numbers would make the given equation correct?

Q.33 $6 \times 4 + 2 = 16$

- (A) $+$ and \times , 2 and 4 (B) $+$ and \times , 2 and 6
 (C) $+$ and \times , 4 and 6 (D) none of these

Q.34 $(3 \div 4) + 2 = 2$

- (A) $+$ and \div , 2 and 3
 (B) $+$ and \div , 2 and 4
 (C) $+$ and \div , 3 and 4
 (D) No interchange of sign, 3 and 4

Q.35 $4 \times 6 - 2 = 14$

- (A) \times to \div , 2 and 4 (B) $-$ to \div , 2 and 6
 (C) $-$ to $+$, 2 and 6 (D) \times to $+$, 4 and 6

Q.36 $(6 \div 2) \times 3 = 0$

- (A) \div and \times , 2 and 3 (B) \times to $-$, 2 and 6
 (C) \div and \times , 2 and 6 (D) \times to $-$, 2 and 3

Q.37 If \times stands for 'addition', \div stands for 'subtraction', $+$ stands for 'multiplication' and $-$ stands for 'division' then

$$20 \times 8 \div 8 - 4 + 2 = ?$$

- (A) 80 (B) 25
 (C) 24 (D) 5

Q.38 If $-$ means \times , \times means $+$, $+$ means \div and \div means $-$ then,

$$40 \times 12 + 3 - 6 \div 60 = ?$$

- (A) 7.95 (B) 4
 (C) 44 (D) 479.55

Q.39 If $+$ means \div , \times means $-$, \div means \times and $-$ means $+$ then

$$8 + 6 \times 4 \div 3 - 4 = ?$$

- (A) -12 (B) $-\frac{20}{3}$
 (C) 12 (D) none

Q.40 If \times means \div , $-$ means \times , \div means $+$ and $+$ means $-$, then

$$(3 - 15 \div 19) \times 8 + 6 = ?$$

- (A) 8 (B) 4
 (C) 2 (D) -1

- Q.41** If + means \times , \div means $-$, \times means \div and $-$ means $+$, what will be the value of $4 + 11 \div 5 - 55 = ?$
 (A) -48.5 (B) -11
 (C) 79 (D) 94
- Q.42** If \times means $+$, \div means $-$, $-$ means \times and $+$ means \div , then
 $8 \times 7 - 8 + 40 \div 2 = ?$
 (A) 1 (B) $7\frac{2}{5}$
 (C) $8\frac{3}{5}$ (D) 44
- Q.43** If + means $-$, $-$ means \times , \times means \div and \div means $+$, then
 $15 \times 3 \div 15 + 5 - 2 = ?$
 (A) 0 (B) 6
 (C) 10 (D) 20
- Q.44** If \times means $-$, $+$ means \div , $-$ means \times and \div means $+$ then
 $15 - 2 \div 900 + 90 \times 100 = ?$
 (A) 190 (B) 180
 (C) 90 (D) none
- Q.45** If + means \div , $-$ means \times , \div means $-$, \times means $+$, what will be the value of
 $8 + 6 \div 4 - 7 \times 3 = ?$
 (A) $-\frac{71}{3}$ (B) $-\frac{23}{2}$
 (C) 12 (D) 14

Directions (Q.46-48)

In each of the following questions if the given interchanges are made in signs and numbers, which one of the four equations would be correct?

- Q.46** Given interchanges: Signs $-$ and \div and number 4 and 8
 (A) $6 - 8 \div 4 = -1$ (B) $8 - 6 \div 4 = 1$
 (C) $4 \div 8 - 2 = 6$ (D) $4 - 8 \div 6 = 2$
- Q.47** Given interchanges : Signs $+$ and \times and numbers 4 and 5
 (A) $5 \times 4 + 20 = 40$ (B) $5 \times 4 + 20 = 85$
 (C) $5 \times 4 + 20 = 104$ (D) $5 \times 4 + 20 = 95$
- Q.48** Given interchanges : Signs $+$ and $-$ and number 4 and 8
 (A) $4 \div 8 - 12 = 16$ (B) $5 \times 4 + 20 = 85$
 (C) $8 \div 4 - 12 = 24$ (D) $8 - 4 \div 12 = 8$

Directions (Q.49-50)

In each of the following questions, an equation becomes incorrect due to the interchange of two signs. One of the four alternatives under it specifies the interchange of signs in the equation, which when made will make the equation correct. Find the correct alternative.

- Q.49** $5 + 6 \div 3 - 12 \times 2 = 17$
 (A) \div and \times (B) $+$ and \times
 (C) $+$ and \div (D) \div and $-$
- Q.50** $2 \times 3 + 6 - 12 \div 4 = 17$
 (A) \times and $+$ (B) $+$ and $-$
 (C) $+$ and \div (D) $-$ and \div

Answer Key

- (B) Using the correct symbols, we have:
 Given expression = $18 \times 12 \div 4 + 5 - 6$
 $= 18 \times 3 + 5 - 6$
 $= 54 + 5 - 6$
 $= 53$
- (B) Using the correct symbols, we have:
 Given expression = $18 \times 14 + 6 - 16 \div 4$
 $= 18 \times 14 + 6 - 4$
 $= 252 + 6 - 4$
 $= 254$
- (A) Using the correct symbols, we have:
 Given expression = $15 \div 3 + 24 - 12 \times 2$
 $= 5 + 24 - 12 \times 2$
 $= 5 + 24 - 24$
 $= 5$
- (D) Using the correct symbols, we have:
 Given expression = $(7 \div 3) - 6 + 5 = 21 - 6 + 5 = 20$
- (C) Using the correct symbols, we have
 $= (10 \div 4) + (4 \div 4) - 6 + 5 = 20$
- (D) Using the correct symbols, we have:
 Given expression = $16 + 24 \div 8 - 6 \div 2 \times 3$
 $= 16 + 3 - 3 \times 3$
 $= 16 + 3 - 9$
 $= 10$
- (A) Using the proper notations in (A), we get the statement as
 $= 52 - 4 \times 5 + 8 \div 2$
 $= 52 - 4 \times 5 + 4$
 $= 52 - 20 + 4 = 36$

8. (C) Using the proper notations in (C), we get the statement as

$$= 16 \times 5 \div 10 + 4 - 3$$

$$= 16 \times \frac{1}{2} + 4 - 3$$

$$= 8 + 4 - 3$$

$$= 9$$
9. (D) Using the proper notations in (D), we get the statement as

$$= 36 \times 6 \div 3 + 5 - 3$$

$$= 36 \times 2 + 5 - 3$$

$$= 72 + 5 - 3$$

$$= 74$$
10. (D) Using the proper notations in (D), we get the statement as

$$= 8 \times 8 + 8 \div 8$$

$$= 8 \times 8 + 1 - 8$$

$$= 64 + 1 - 8$$

$$= 57$$
11. (D) Using the proper notations in (D), we get the statement as

$$= 9 + 9 \div 9 - 9 \times 9$$

$$= 9 + 1 - 9$$

$$= 9 + 1 - 81$$

$$= -71$$
12. (A) Using the proper notations in (A), we get the statement as

$$= 2 < 2 \times 4 + 1 \times 4 - 8 \text{ or } 2 < 4,$$

 which is true
13. (B) Using the proper notations in (B) we get statement as

$$= 2 \div 1 + 10 \times 1 < 6 \times 4 \text{ or } 11 < 24,$$

 which is true
14. (D) Using the proper notations in (D), we get the statement as

$$= 10 \times 2 > 2 \div 1 \times 10 \div 2 \text{ or } 20 > 10,$$

 which is true
15. (B) Using the proper notations in (D), we get the statement as

$$= 14 = 2 \times 4 \times 2 - 2 \div 1 \text{ or } 14 = 14,$$

 which is true
16. (A) Using the proper notations in (A), we get the statement as

$$= 8 \div 4 \times 1 - 2 = 16 - 16 \text{ or } 0 = 0,$$

 which is true
17. (B) Using the proper notations in (B), we get the statement as

$$= 16 + 2 - 4 = 6 + 8 \text{ or } 14 = 14,$$

 which is true
18. (D) Using the proper notations in (D), we get the statement as

$$= 20 + 4 \div 4 - 2 > 3 \text{ or } 19 > 3,$$

 which is true
19. (A) Using the proper notations in (A), we get the statement as

$$= 15 \div 5 + 3 = 2 \times 3 \text{ or } 6 = 6,$$

 which is true
20. (D) Using the proper notations in (D), we get the statement as

$$= 24 \div 3 \times 2 = 2 \times 8 \text{ or } 16 = 16,$$

 which is true
21. (A) Using the proper notations in (A), we get the statement as

$$= 30 + 6 \div 2 > 4 \times 3 \text{ or } 33 > 12,$$

 which is true
22. (B) On interchanging + and - and 4 and 8 in (B), we get the equation as

$$6 \times 3 - 8 = 10 \text{ or } 18 - 8 = 10 \text{ or } 10 = 10,$$

 which is true
23. (B) On interchanging - and \div , we get the equation as

$$5 + 3 \times 8 \div 12 - 4 = 3 \text{ or } 5 + 3 \times \frac{2}{3} - 4 = 3$$

 or $3 = 3$, which is true
24. (B) On interchanging - and \div we get:
 Given expression = $16 \div 8 - 4 + 5 \times 2$

$$= 2 - 4 + 5 \times 2$$

$$= 2 - 4 + 10$$

$$= 8$$
25. (C) On interchanging \div and -, we get
 Given expression = $9 + 5 - 4 \times 3 \div 6$

$$= 9 + 5 - 4 \times \frac{1}{2}$$

$$= 9 + 5 - 2$$

$$= 12$$
26. (B) On interchanging - and +, we get:
 Given expression = $12 \div 2 + 6 \times 3 - 8$

$$= 6 + 6 \times 3 - 8$$

$$= 6 + 18 - 8$$

$$= 16$$
27. (C) On interchanging + and \times , we get the equation as

$$10 \times 10 \div 10 - 10 + 10 = 10$$

 or $10 \times 1 - 10 + 10 = 10$
 or $10 = 10$,
 which is true

- 28.** (C) On interchanging 6 and 4 on L.H.S., we get the statement as
 $5 + 3 \times 4 - 6 \div 2 = 4 \times 3 - 10 \div 2 + 7$
 or $5 + 12 - 5 + 7$ or $14 = 14$
- 29.** (A) On interchanging 7 and 6, we get the statement as
 $6 \times 2 - 3 + 8 \div 4 = 5 + 7 \times 2 - 24 \div 3$
 or $12 - 3 + 2 = 5 + 14 - 8$ or $11 = 11$,
 which is true
- 30.** (A) On interchanging 3 and 5, we get the statement as
 $15 + 5 \times 4 - 8 \div 2 = 8 \times 3 + 16 \div 2 - 1$
 or $15 + 20 - 4 = 24 + 8 - 1$ or $31 = 31$,
 which is true
- 31.** (D) On interchanging 9 and 5 on R.H.S., we get the statement as after putting the values we find $21 = 21$, which is true
- 32.** (C) On interchanging 9 and 6, we get the statement as
 $8 \div 2 \times 5 - 11 + 6 = 9 \times 2 - 5 + 4 \div 2$
 or $4 \times 5 - 11 + 6 = 18 - 5 + 2$
 or $15 = 15$, which is true
- 33.** (C) On interchanging + and \times and 4 and 6, we get the equation as
 $4 + 6 \times 2 = 16$ or $4 + 12 = 16$ or $16 = 16$,
 which is true
- 34.** (A) On interchanging + and \div and 2 and 3, we get the equation as
 $(2 + 4) \div 3 = 2$ or $6 \div 3 = 2$ or $2 = 2$,
 which is true
- 35.** (C) On changing $-$ to $+$ and interchanging 2 and 6, we get the equation as
 $4 \times 2 + 6 = 14$ or $8 + 6 = 14$ or $14 = 14$,
 which is true
- 36.** (D) On changing \times to $-$ and interchanging 2 and 3 we get the equation as
 $(6 \div 3) - 2 = 0$ or $2 - 2 = 0$ or $0 = 0$,
 which is true
- 37.** (C) Using the correct symbols, we have :
 Given expression = $20 + 8 - 8 \div 4 \times 2$
 $= 20 + 8 - 2 \times 2$
 $= 20 + 8 - 4$
 $= 24$
- 38.** (B) Using the correct symbols, we have:
 Given expression = $40 + 12 \div 3 \times 6 - 60$
 $= 40 + 4 \times 6 - 60$
 $= 40 + 24 - 60$
 $= 4$
- 39.** (B) Using the correct symbols, we have:
 Given expression = $8 \div 6 - 4 \times 3 + 4$
 $= \frac{4}{3} - 4 \times 3 + 4$
 $= \frac{4}{3} - 12 + 4$
 $= \frac{-20}{3}$
- 40.** (C) Using the correct symbols, we have :
 Given expression = $(3 \times 15 + 19) \times 8 - 6$
 $= (45 + 19) \div 8 - 6$
 $= 64 \div 8 - 6$
 $= 8 - 6$
 $= 2$
- 41.** (D) Using the correct symbols, we have:
 Given expression = $4 \times 11 - 5 + 55$
 $= 44 - 5 + 55$
 $= 94$
- 42.** (B) Using the correct symbols, we have:
 Given expression = $8 + 7 \times 8 \div 40 - 2$
 $= 8 + 7 \times \frac{1}{5} - 2$
 $= 8 + \frac{7}{5} - 2$
 $= \frac{37}{5}$
 $= 7\frac{2}{5}$
- 43.** (C) Using the correct symbols, we have: s
 Given expression = $15 \div 3 + 15 - 5 \times 2$
 $= 5 + 15 - 5 \times 2$
 $= 5 + 15 - 10$
 $= 10$
- 44.** (D) Using the correct symbols we have :
 Given expression = $15 \times 2 + 900 \div 90 - 100$
 $= 15 \times 2 + 10 - 100$
 $= 30 + 10 - 100$
 $= -60$
- 45.** (A) Using the correct symbols, we have:
 Given expression = $8 \div 6 - 4 \times 7 + 3$
 $= \frac{4}{3} - 4 \times 7 + 3 = \frac{4}{3} - 28 + 3 = -\frac{71}{3}$
- 46.** (C) On interchanging $-$ and \div and 4 and 8 in (c), we get the equation as
 $8 - 4 \div 2 = 6$ or $8 - 2 = 6$ or $6 = 6$,
 which is true

47. (C) On interchanging + and \times and 4 and 5 in (c), we get the equation as

$$4 + 5 \times 20 = 104 \text{ or } 104 = 104,$$

which is true

48. (B) On interchanging + and $-$ and 4 and 8 in (b), we get the equation as

$$8 + 4 - 12 = 0 \text{ or } 12 - 12 = 0 \text{ or } 0 = 0,$$

which is true

49. (A) On interchanging \div and \times , we get:

$$\text{Given expression} = 5 + 6 \times 3 - 12 \div 2$$

$$= 5 + 6 \times 3 - 6$$

$$= 5 + 18 - 6$$

$$= 17$$

50. (A) On interchanging \times and +, we get:

$$\text{Given expression} = 2 + 3 \times 6 - 12 \div 4$$

$$= 2 + 3 \times 6 - 3$$

$$= 2 + 18 - 3$$

$$= 17$$